

Post Demolition Remediation Report

SEGRO Park, Hayes (former Nestle Factory)

Date: January 2020

Issue: 02

Reference: 18-148

Status: Final

Prepared by: PWE

Date: 29/01/2020

Authorised by: NRB

Date: 29/01/2020

Issuing office: BKM

DOCUMENT CONTROL

Issue	Date	Status	BC Author (Date/Initials)	BC Approval (Date/Initials)	Notes
1	16/1/2020	D	PWE_16/1/2020	NRB_16/1/2020	
2	29/1/2020	Final	PWE_29/1/2020	NRB_29/1/2020	Client comments

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CONTENTS

	Page No.
1. INTRODUCTION.....	1
1.1 APPOINTMENT.....	1
1.2 BACKGROUND AND REPORT PURPOSE	1
1.3 PREVIOUS REPORTS	1
1.4 PLANNING MATTERS.....	2
2. SITE SETTING	4
2.1 LOCATION AND PRE-DEVELOPMENT DESCRIPTION.....	4
2.2 SUMMARY OF SITE HISTORY	4
2.3 POST-DEMOLITION DESCRIPTION	5
3. ENVIRONMENTAL SETTING	6
3.2 HYDROGEOLOGY	6
3.3 HYDROLOGY	6
3.4 PREVIOUS INVESTIGATION FINDINGS	6
3.5 REMEDIATION STRATEGY	7
4. DEMOLITION-PHASE REMEDIATION	8
4.1 INTRODUCTION.....	8
4.2 GREEN BEAN BUILDING.....	8
4.3 EDEN BUILDING.....	16
4.4 MAIN BUILDING, CAR PARK AND ACCESS ROADS.....	19
5. FURTHER INVESTIGATIONS AND LABORATORY TESTING.....	22
5.1 SCOPE	22
5.2 SUMMARY OF RESULTS	22
6. GROUNDWATER ABSTRACTION WELL DECOMMISSIONING	24
7. SUMMARY AND CONCLUSIONS	25

APPENDICES

APPENDIX A	–	ARCHITECT'S DEVELOPMENT LAYOUT DRAWING
APPENDIX B	–	SITE LOCATION PLAN
APPENDIX C	–	TOPOGRAPHICAL SURVEY
APPENDIX D	–	ASBESTOS REMOVAL PROCEDURE FLOW CHART (GREEN BEAN BUILDING)
APPENDIX E	–	LABORATORY ANALYSIS DATA – SOIL TRANSFERRED TO PROVECTUS
APPENDIX F	–	TRIAL PIT LOGS AND LOCATION PLAN
APPENDIX G	–	LABORATORY ANALYSIS DATA – ADDITIONAL TRIAL PITS
APPENDIX H	–	DECOMMISSIONED GROUNDWATER ABSTRACTION WELL RECORDS

1. INTRODUCTION

1.1 APPOINTMENT

- 1.1.1 Bradbrook Consulting was appointed by SEGRO Properties Limited (the Client) to produce a Post Demolition Remediation Report for the site known as SEGRO Park Hayes, in the London Borough of Hillingdon.

1.2 BACKGROUND AND REPORT PURPOSE

- 1.2.1 SEGRO Park Hayes is located on the site of a former coffee manufacturing plant operated by Nestle UK Ltd, which ceased production and closed at the end of 2014. The Nestle factory covered a total of about 12 hectares, of which 5 hectares is being redeveloped by SEGRO for light industrial / warehouse units (see architect's drawing in Appendix A). The remainder of the former Nestle factory is being redeveloped separately by others for residential use, and is not covered by this report.
- 1.2.2 The purpose of this report is to describe environmental remediation undertaken during the demolition enabling works of the SEGRO redevelopment. This took place between November 2018 and January 2020.

1.3 PREVIOUS REPORTS

Capita Reports for SEGRO

- 1.3.1 Prior to closure of the Nestle factory a geo-environmental investigation was undertaken by Capita Property & Infrastructure Limited covering the whole of the 12 hectare site. The findings of that investigation were presented in the following report:
- Geo-environmental Investigation and Assessment, ref. CS075666-PE-14-211-R Revision A dated 24 November 2014.
- 1.3.2 The 2014 report was followed by a further investigation relating specifically to the area being developed by SEGRO for new commercial properties:
- Further Geo-environmental Investigation and Assessment ref. CS-075666-PE-16-113-R Revision A dated 6 June 2016.
- 1.3.3 A Remediation Strategy was then produced by Capita based on the findings of the preceding reports:
- Remediation Strategy, ref. CS-075666-PE-16-131-R dated 11 July 2016.
- 1.3.4 An additional phase of investigation was then undertaken by Capita in 2018 to augment the earlier work. This comprised four boreholes located within the Eden Building and the Green Bean Warehouse, which were previously inaccessible:
- Additional Geo-environmental Assessment, ref. CS-075666-JD-18-113-R dated June 2018.

Geosyntec Reports for Nestlé

1.3.5 The following reports were produced for Nestlé UK Ltd by Geosyntec Consultants Ltd and were reviewed as part of Capita's November 2014 assessment:

- Phase 1 Environmental Assessment of the Nestlé UK Ltd Facility in Hayes, Middlesex. Project ref. GCU0124020 dated September 2013.
- Phase 2 Environmental Assessment of the Nestlé UK Ltd Facility in Hayes, Middlesex. Project ref. GCU0124024 dated June 2014.
- Subsurface Asbestos Investigation: Main Building Undercroft & South-Eastern Surrounding Area. Project ref. GCU0124025 dated July 2014.
- Letter report titled "Update on Groundwater Monitoring Results post September-14 round" dated 23 October 2014.

1.4 PLANNING MATTERS

1.4.1 Condition 87 of the planning consent for the proposed redevelopment, granted by the London Borough of Hillingdon (ref. 1331/APP/2017/1883), relates to the remediation of ground affected by contamination. The condition states:

The scheme to remediate any contamination in relation to the industrial development is to be completed in accordance with the following Environmental Reports prepared by Capita and as submitted with the Planning Application:

- *Remediation Report, dated 11 July 2016*
- *Further Geo-environmental Assessment, dated 6 June 2016*

These reports set out site investigation and remediation strategies. All works which form part of the remediation scheme for the industrial development shall be completed before any part of the industrial development is occupied or brought into use.

If during remedial or development works contamination not addressed in the submitted remediation scheme is identified an addendum to the remediation scheme shall be submitted to and approved in writing by the LPA prior to implementation; and

Upon completion of the approved remedial works, this condition will not be discharged until a comprehensive verification report has been submitted to and approved by the LPA. The report shall include the details of the final remediation works and their verification to show that the works have been carried out in full and in accordance with the approved methodology.

No contaminated soils or other materials shall be imported to the site. All imported soils for landscaping purposes shall be clean and free of contamination. Before any part of the development is occupied, all imported soils shall be independently tested for chemical contamination, and the results of this testing shall be submitted and approved in writing by the Local Planning Authority. All soils used for gardens and/or landscaping purposes shall be clean and free of contamination.

- 1.4.2 This Bradbrook report is considered to satisfy the requirements of Condition 87 in respect of remediation undertaken during the demolition period. A further report will be produced in relation to any additional remediation undertaken during the development construction period.

2. SITE SETTING

2.1 LOCATION AND PRE-DEVELOPMENT DESCRIPTION

- 2.1.1 The site is located off North Hyde Gardens in Hayes, approximately centred on post code UB3 4RF and at Ordnance Survey National Grid Reference 510100, 179190. A location plan is provided in Appendix B.
- 2.1.2 The area covered by this report, covering approximately 5.15 hectares in the eastern and northern part of the former Nestle factory, was previously occupied by several buildings and areas of macadam and concrete hardstanding. Surface levels ranged between about 31.4 and 30.5 mAOD, with a slight fall towards the west.
- 2.1.3 The main features were:
- The Green Bean Warehouse - 1970s-era building previously used for the storage of coffee beans. It comprised a double bay, single storey warehouse with reinforced concrete frame, a concrete floor slab, masonry panels and duo pitched roof.
 - The Eden Building - constructed in the late 1970s or early 1980s, located to the south of Green Bean and used for packing and loading of finished products. It comprised a single storey warehouse with reinforced concrete frame, masonry panels and a flat roof. There was a canopy roof along the northern side of the building and dock levellers along this elevation for loading/unloading of goods.
 - The Lodge, a former residential property in the south-eastern corner of the site.
 - The Main Building, of varying construction types and modified / added to on a number of occasions. The building spanned the boundary between land to be developed by SEGRO and the residential developer.
 - The Gatehouse, located in the central eastern part of the site.
 - A macadam surfaced car park covering much of the southern end of the site.

2.2 SUMMARY OF SITE HISTORY

- 2.2.1 Information on the site's historical land use is provided in the previous reports.
- 2.2.2 The earliest part of the Main Building was completed circa 1914 for a cocoa factory. During the First World War much of the site was commandeered for a munitions factory. This closed in 1919 and the site reverted to cocoa (and later coffee) production. The Main Building was extended in the 1930s and further modified and added to in the 1960s. The factory continued to expand throughout the second half of the twentieth century and many of the larger warehouse-type buildings were constructed in the 1970s.

2.2.3 The factory closed at the end of 2014 and the site was vacated by Nestle at the end of June 2015, since when it has been disused.

2.3 POST-DEMOLITION DESCRIPTION

2.3.1 Demolition works were undertaken by Squibb Demolition Ltd and comprised removal of the majority of above-ground structures, other than the façade of the Main Building which has been retained. The façade comprises part of the original structural frame of that building and consists of reinforced concrete columns, floor edge beams and concrete upstands. A temporary steel frame has been constructed by Squibb to support the façade prior to it being incorporated into the new development.

2.3.2 The majority of below-ground obstructions (building foundations etc) were removed to a specified depth of about 2 m. Most surface hardstandings were also removed, although at the time of reporting parts of the former internal estate road remain.

2.3.3 Where possible, concrete and brick recovered from the demolition activities was crushed for future re-use within the new development, and a number of aggregate stockpiles currently occupy the site. There are also stockpiles of uncrushed concrete rubble, and of soil arisings that were generated during the demolition activities.

2.3.4 A January 2020 topographical survey illustrating the site layout and stockpile locations is enclosed in Appendix C.

3. ENVIRONMENTAL SETTING

3.1.1 Exploratory boreholes and trial pits formed for the previous geo-environmental investigations identified the following generalised stratigraphic sequence:

Stratum	Thickness range (m)	Depth range to top (mbgl)	Depth range to base (mbgl)
Concrete / Macadam	0.07 to 0.80	GL	0.06 to 0.80
Made Ground: typically described as grey or brown clayey sandy gravel or gravelly clay with fragments of concrete, brick and tile. Occasional chalk, ash, metal.	0.15 to 2.3	0.15 to 2.3	0.15 to 2.3
Langley Silt / Brickearth: soft to firm silty sandy clay.	0.2 to 1.6	0.35 to 2.5	0.85 to 3.0
Lynch Hill Gravel: medium dense and dense orange-brown and dark brown sandy flint gravel.	0.9 to 3.3	0.85 to 3.0	2.6 to 5.3
London Clay: firm brown and grey silty clay.	Not proven	2.6 to 5.3	Not proven

3.2 HYDROGEOLOGY

- 3.2.1 The Lynch Hill Gravel is designated a Principal aquifer by the Environment Agency and the underlying London Clay Formation is an Unproductive stratum (i.e. a non aquifer).
- 3.2.2 The site is not within an EA-designated Groundwater Source Protection Zone.
- 3.2.3 Resting groundwater lies at between about 1 m and 2 m below ground level, typically coinciding with the top of the Lynch Hill Gravel.

3.3 HYDROLOGY

- 3.3.1 The nearest significant surface watercourse is the Grand Union Canal, which defines much of the site's northern boundary. The River Crane is situated about 175 m east of the site and flows in a southerly direction, discharging into the River Thames about 10 km to the south.

3.4 PREVIOUS INVESTIGATION FINDINGS

- 3.4.1 Laboratory analysis of soil and groundwater samples was concluded not to indicate severe chemical impacts in the area and context of the proposed commercial redevelopment.
- 3.4.2 However there was a reported persistent presence of asbestos containing materials (ACM) in shallow soils, requiring a degree of risk mitigation. In most instances the asbestos comprised loose fibres at low concentrations (<0.001% to 0.22% by mass), predominantly chrysotile but also small amounts of amosite and crocidolite. However there was also evidence of potential accumulations of ACM such as

degraded insulation lagging and in other forms such as asbestos cement entrained within the Made Ground.

3.5 REMEDIATION STRATEGY

- 3.5.1 The approved Remediation Strategy proposed that as far as reasonably practical asbestos should be removed from shallow soils.
- 3.5.2 Regular inspections of the ground formation were to be undertaken during the lifting of hard surfacing and where possible the ACM hand-picked by suitably qualified and experienced personnel. Any such ACM should then be disposed of from site to a licenced facility.
- 3.5.3 It was further proposed that in some instances bulk soil removal might be necessary if hand picking proved not to be feasible.
- 3.5.4 Validation testing was to be undertaken on completion to demonstrate adequate removal.
- 3.5.5 A reactive strategy to manage any previously undiscovered 'hotspots' of for example hydrocarbon impact was also agreed.

4. DEMOLITION-PHASE REMEDIATION

4.1 INTRODUCTION

4.1.1 As anticipated from the ground investigations, asbestos containing materials were encountered in several locations in shallow soil below the previous buildings and external roads/service yards.

4.1.2 As a consequence of this, specialist asbestos consultant Tetra Consulting was engaged by SEGRO to provide a consistent site presence and support Squibb in removing and managing the asbestos risk.

4.1.3 The following sections describe the environmental remediation undertaken in respect of asbestos in soil, during the demolition period up to January 2020.

4.2 GREEN BEAN BUILDING

4.2.1 Following demolition of the Green Bean warehouse it was discovered that fragments of asbestos cement were present directly below the concrete ground-bearing floor slab.

4.2.2 It was also observed that, in some locations, the fragments were attached to / embedded in the underside of the concrete slab. This was concluded to be due to the slab having been poured (in the 1970s) directly onto subbase containing sporadic asbestos cement. Where this was the case it was determined not to be possible to separate the ACM from the concrete; therefore, as the slab was broken out, some elements were required to be disposed of from site.



19 January 2018:

Initial breaking-out of
Green Bean floor slab.

Fragments of ACM
observed in sub-base.



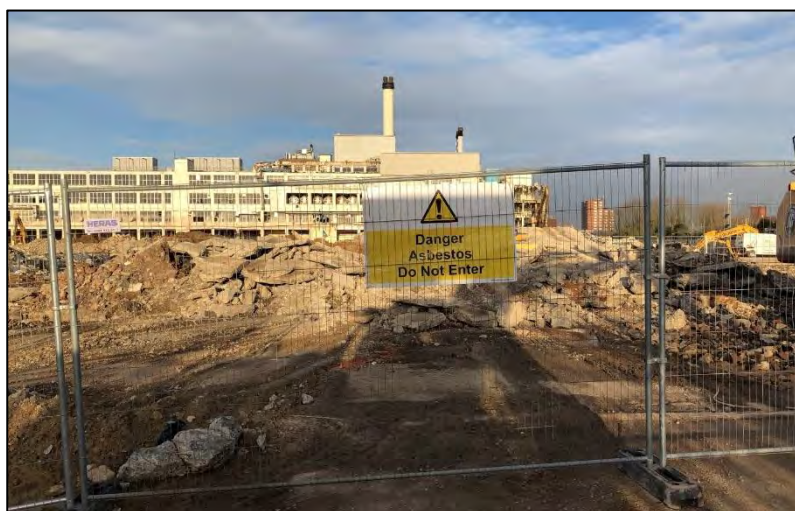
19 January 2018:

Initial breaking-out of
Green Bean floor slab.

Fragments of ACM
observed in sub-base.

4.2.3 As removal of the Green Bean slab progressed it was determined that a process of mechanical screening of the subbase should be implemented, to augment the hand-picking of readily removable ACM from the surface.

4.2.4 The flow chart in Appendix D describes the procedure adopted by Squibb. In summary, the subbase was initially screened using a slatted 'shaker bucket' attached to an excavator. This allowed removal of larger fragments clearly free of asbestos, for crushing and retention on site. Smaller fragments were then passed through a mechanical screener to remove fine-grained particles. These fines were stockpiled and, following testing which confirmed the presence of ACM, were removed from site as described below. The coarser-grained fraction that passed through the screener was subject to further visual examination to remove any visible ACM, and retained for re-use within the future development.



20 February 2019:

Further breaking-out of
Green Bean floor slab.

Suspected fragments of
ACM observed in sub-
base.



4 March 2019:

Further breaking-out of
Green Bean floor slab
and screening of
subbase for ACM.



12 March 2019:

Mechanical excavation
of subbase for
screening of ACM



12 March 2019:

Mechanical excavation
of subbase for
screening of ACM



12 March 2019:

Inspection of screened subbase to remove asbestos cement fragments.



19 March 2019:

Further breaking-out of Green Bean floor slab and screening of subbase for ACM.



19 March 2019:

Mechanical screening of Green Bean subbase



27 March 2019:

Green bean floor area following excavation of subbase for screening.



27 March 2019:

Manual picking of asbestos cement fragments from mechanically screened subbase, using conveyor system.



27 March 2019:

Manual picking of asbestos cement fragments from mechanically screened subbase, using conveyor system.



27 March 2019:

Mechanical screening of subbase. Fine grained soil containing asbestos fibres was removed from site.



3 April 2019:

Exposed underlying soil formation following excavation of Green Bean subbase.

Formation inspected by Tetra to confirm absence of ACM.



3 April 2019:

Exposed underlying soil formation following excavation of Green Bean subbase.

Formation inspected by Tetra to confirm absence of ACM.



9 April 2019:

Mechanical screening
of Green Bean
subbase.



9 April 2019:

Use of conveyor belt to
manually remove
asbestos cement
fragments.



9 April 2019:

Bagged asbestos
cement for disposal



17 April 2019:

Green Bean subbase
following screening to
remove ACM.



16 May 2019:

Further screening of
subbase



23 May 2019:

Fine grained soil
containing ACM
removed from site to
soil recycling facility

- 4.2.5 As noted above, a stockpile of fine-grained soil (<40 mm particle size) was created as a result of the screening process. No samples of this stockpile were obtained on 5th April 2019 for laboratory analysis, to determine suitability for re-use within the future development. The analysis suite included metals and metalloids; petroleum hydrocarbons; and asbestos. The results of the analysis are presented in Appendix E.
- 4.2.6 The laboratory data indicated free fibres of asbestos to be present at concentrations of between <0.001 and 0.003% by mass. However visual examination of the stockpile recorded the clear presence of ACM fragments, such that retention of the soil was concluded not to be appropriate. Arrangements were therefore made to transfer the stockpile to an off-site soil recycling centre operated by Provectus Ltd.
- 4.2.7 Consignment notes relating to the transfer of this soil are available on request.
- 4.3 EDEN BUILDING
- 4.3.1 Removal of the former Eden Building floor slab revealed occasional fragments of ACM within the subbase and/or embedded to the concrete; however the frequency of occurrence was notably less than below the Green Bean warehouse.
- 4.3.2 As was the case with the Green Bean slab, concrete with asbestos attached was removed from site to a specialist facility for disposal.
- 4.3.3 Where loose fragments of ACM were present in the subgrade, a programme of hand-picking to remove ACM fragments (asbestos cement or similar) was implemented in accordance with the Remediation Strategy.



19 March 2019:

Breaking out of Eden Building slab.

Sporadic ACM fragments observed in subbase.



27 March 2019:

Excavated
foundations of
former Eden Building



17 April 2019:

View of former Eden
Building with
stockpiled demolition
crush covering
western part of slab



16 May 2019:

Eden Building
foundation



17 June 2019:

ACM below north-eastern corner of Eden Building.



17 June 2019:

View of former Eden Building floor area; crush stockpiles cover western part.



8 July 2019:

Asbestos cement detected in former cable duct below northern edge of former Eden Building



22 July 2019:

Asbestos cement
fragments hand-
picked and bagged
for disposal



24 July 2019:

Former Eden
building; location of
picked ACM
fragments circled.

4.4 MAIN BUILDING, CAR PARK AND ESTATE ROADS

4.4.1 Asbestos containing materials were also detected sporadically below the former Main Building, the former car park, and the various internal estate roads.

4.4.2 The following photographs illustrate some of the matters addressed:



8 July 2019:

Suspected ACM
below former car
park; plastic sheeting
covers applicable
area.

ACM hand-picked
by Tetra and
removed from site.



28 August 2019:

Former car park
following removal of
macadam surface.



13 September 2019:

ACM hand-picked
from the surface
following breaking
out of estate road on
eastern boundary.



31 October 2019:

Area of former annex
to front of retained
façade.



6 January 2020:

Area of rear of
retained façade.

5. FURTHER INVESTIGATIONS AND LABORATORY TESTING

5.1 SCOPE

5.1.1 A series of exploratory trial pits were machine excavated during the demolition period, to supplement the preceding phases of intrusive investigation. The pits were excavated following removal of the hard surfacing and were intended to support and inform the process of localised soil screening and hand-picking of ACM fragments. The excavation of the pits also allowed an assessment to be made of whether ACM, if present, was restricted to the upper surface layer or was present at greater depths.

5.1.2 The following works were undertaken:

Reference	Site Area	Date
TP E1 to TP E5	Eastern part of Eden Building	12 April 2019
TP E6 to TP E11	Western part of Eden Building	6 June 2019
TP401 to TP419	Car park and estate roads	13, 20, 21 and 24 May 2019

5.1.3 Exploratory hole logs and a location plan for these trial pits are provided in Appendix F. The results of laboratory testing of soil samples are provided in Appendix G.

5.2 SUMMARY OF RESULTS

5.2.1 Soil samples from each trial pit were screened in the laboratory for the presence of ACM, and selected samples were also analysed for a suite of potential chemical contaminants including metals, metalloids and hydrocarbons. The data did not indicate elevated concentrations of these substances in the context of the proposed commercial development.

5.2.2 The following table summarises the results of the asbestos screening and quantification testing:

Reference	Depth (mbgl)	Asbestos concentration (% by mass)
TP401	0.3	<0.001
	0.7	Not detected
TP402	0.3	<0.001
TP403	0.3	Not detected
	1.05	<0.001
TP404	0.7	<0.001
TP406	0.3	Not detected
	0.5	Not detected
TP407	0.2	Not detected
	0.8	0.001
TP408	0.5	Not detected

Reference	Depth (mbgl)	Asbestos concentration (% by mass)
TP408	1.0	0.001
TP409	0.3-0.4	0.541
	0.9-1.0	<0.001
TP410	0.2	Not detected
	1.1	0.001
TP411	0.5	<0.001
	0.75	0.02
TP412	0.3	Not detected
	1.0	Not detected
TP413	0.4	0.001
	1.4	Not detected
TP414	0.3-0.4	<0.001
	1.2-1.3	<0.001
TP415	0.3-0.4	0.011
	1.0-1.1	0.015
TP416	0.2-0.3	Not detected
	1.0-1.1	0.085
TP417	0.1-0.2	Not detected
	0.5-0.6	Not detected
TP418	0.4	<0.001
	0.65	Not detected
TP419	0.2	Not detected
	0.65	Not detected

- 5.2.3 It can be seen that in the great majority of cases the ACM content was either below limits of detection or at/less than 0.001% by mass.
- 5.2.4 It was recognised that the data indicated a possible zone of ACM impact in the north-western sector of the former car park, around TP409; this area was consequently subject to additional inspection to remove visible fragments.

6. GROUNDWATER ABSTRACTION WELL DECOMMISSIONING

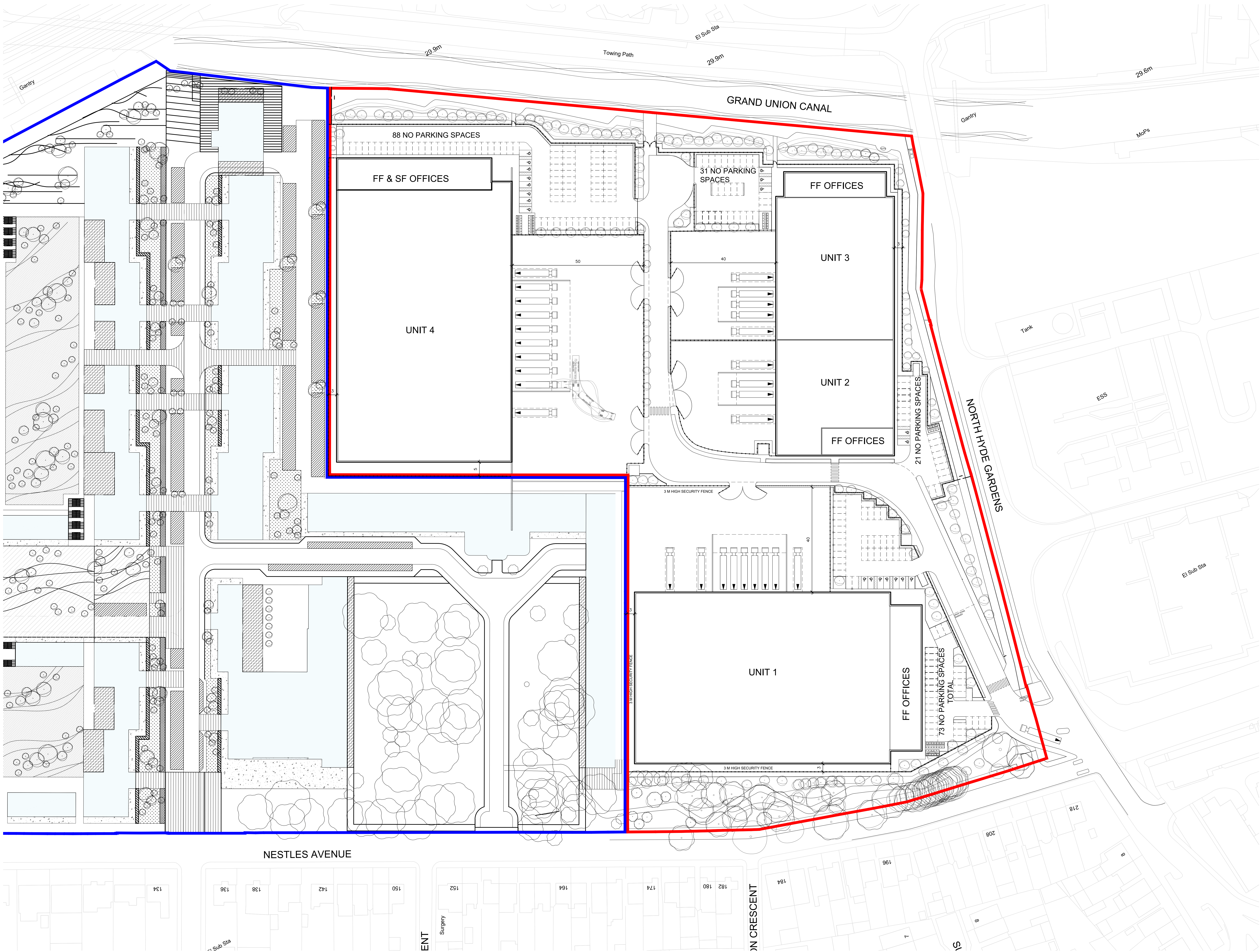
- 6.1 A groundwater abstraction well previously operated by Nestle was decommissioned by specialist contractor G Stow plc, under instruction from Squibb, as part of the demolition contract. The Environment Agency permit (ref. TH/039/0036/011) in relation to operation of the well had previously been relinquished by Nestle following closure of the former factory, in February 2015.
- 6.2 The well (250 mm diameter) was situated at the northern end of the Main Building (OS grid reference TQ 10238 79269) and extended to a depth of 152 m. Following removal of the headworks and internal pump mechanism, the well was backfilled by G Stow with washed shingle and bentonite/cement grout, and capped with concrete, in accordance with Environment Agency guidance.
- 6.3 Full details are provided on the enclosed completion certificate and section drawing (see Appendix H).

7. SUMMARY AND CONCLUSIONS

- 7.1 This Post Demolition Remediation Report provides details of environmental remediation carried out during demolition of the part of the former Nestle factory in Hayes proposed to be brought forward by SEGRO for commercial redevelopment. The works were undertaken by Squibb Demolition Limited between November 2018 and January 2020. Bradbrook Consulting provided civil, structural and geo-environmental engineering services during the contract and Tetra Consulting provided specialist advice in respect of asbestos removal.
- 7.2 A Remediation Strategy was produced in July 2016 and approved by the local authority through the town planning process. The strategy was informed by various phases of intrusive ground investigation and risk assessment, which had concluded that asbestos containing materials (ACM) may be encountered in the ground following removal of the former factory buildings and external hard surfaces. The recommendations of the strategy were implemented during the demolition process.
- 7.3 Remediation works comprised hand-picking of ACM from granular subbase and off-site disposal; disposal of fragments of concrete floor slabs or service yard slabs where fragments of ACM were permanently embedded into the concrete; and localised removal of soils containing ACM that could not be practically sorted on site.
- 7.4 ACM fragments were disposed of by Squibb to appropriately licenced facilities. Soils containing entrained ACM were transferred to a soil recycling centre for processing and re-use off-site.
- 7.5 Additional exploratory trial pits undertaken during the demolition period indicated occasional ACM fragments to exist. Laboratory analysis of soil samples recovered from these pits also recorded sporadic trace concentrations of loose fibres.
- 7.6 It is concluded that robust and proportionate measures have been taken to remove asbestos from soils during the demolition period as far as reasonably practicable. This is consistent with the recommendations of the approved Remediation Strategy.
- 7.7 Residual fragments of ACM are considered nevertheless to inevitably remain within the soil mass. This may particularly be the case where parts of the estate road hard surface have not yet been removed. The main development contractor will therefore be required as a contractual obligation to make due allowance for maintaining a watching brief during the main construction period. Where ACM is observed, for example in excavations formed for new building foundations, for drainage attenuation tanks or for utility trenches, it is to be removed by suitably experienced and qualified personnel.
- 7.8 A final Remediation Verification report should be produced prior to completion of the development to describe any additional remedial works undertaken.

APPENDIX A

ARCHITECT'S DEVELOPMENT LAYOUT DRAWING



NOTES:
SUBJECT TO STATUTORY CONSENTS
SUBJECT TO SURVEY
BASED ON OS MAP REPRODUCED BY PERMISSION OF
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FIGURED DIMENSIONS TAKE PRECEDENCE AND NOTIFY
MICHAEL SPARKS ASSOCIATES OF ANY DISCREPANCIES



NOTES:
HOUSING SHOWN INDICATIVE

AREA SCHEDULE
GEA

	sqm	sqft
1	7,025	75,620
FF Offices	681	7,330
Sub total	7,706	82,950

	Ha	acres
PLOT 1 AREA	1.232	3.04

	sqm	sqft
2	1,990	21,420
FF Offices	292	3,145
Sub total	2,282	24,565

	sqm	sqft
3	2,828	30,440
FF Offices	382	4,110
Sub total	3,210	34,550

	sqm	sqft
4	7,643	82,270
FF&SF Offices	1,424	15,330
Sub total	9,067	97,600

TOTAL	22,265	239,665
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	Ha	acres
PLOT AREA (Approx.)	5.157	12.74

DENSITY 43.2 %

AREA SCHEDULE
GIA

	sqm	sqft
1	6,847	73,700
FF Offices	628	6,760
Plant	25	270
Sub total	7,500	80,730

	Ha	acres
PLOT 1 AREA	1.232	3.04

	sqm	sqft
2	1,917	20,635
FF Offices	264	2,840
Plant	25	270
Sub total	2,206	23,745

	sqm	sqft
3	2,734	29,430
FF Offices	345	3,715
Plant	25	270
Sub total	3,104	33,415

	sqm	sqft
4	7,457	80,265
FF&SF Offices	1,314	14,145
Plant	25	270
Sub total	8,796	94,680

TOTAL	21,606	232,570
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	Ha	acres
PLOT AREA (Approx.)	5.157	12.74

DENSITY 41.9 %

K	16/10/2018	Updated van park on canal front	AT	AC
J	15/10/2018	Updated layout after comments	AT	AC
I	12/10/2018	Updated firm trail gates	AT	AC
H	10/09/2018	Updated canal front	AT	AC
G	18/05/2018	Updated Unit 4 areas	AT	AC
F	08/01/2017	Updated landscape and access road near unit 1	AT	AC
E	08/11/2016	Updated turning head and kerbs	AT	AC
D	30/09/2016	Updated Unit 1 service yard	AT	AC
C	23/09/2016	Updated facade extension	AT	AC
B	13/09/2016	Updated area schedule	AT	AC
A	25/07/2016	Updated layout	AT	AC
	22/07/2016	Final issue	AT	AC
REV	DATE	NOTE	DATE	CHKD



CHARTERED ARCHITECTS
11 PLATO PLACE
33 STONEY ROAD
LONDON SW6 4PU
TELEPHONE 020 7336 6162
FAX 020 7336 3886
www.mspa-architects.co.uk

TITLE
NESTLES AVENUE, HAYES
DRAWING
SITE MASTER PLAN

CLIENT
SEGRO

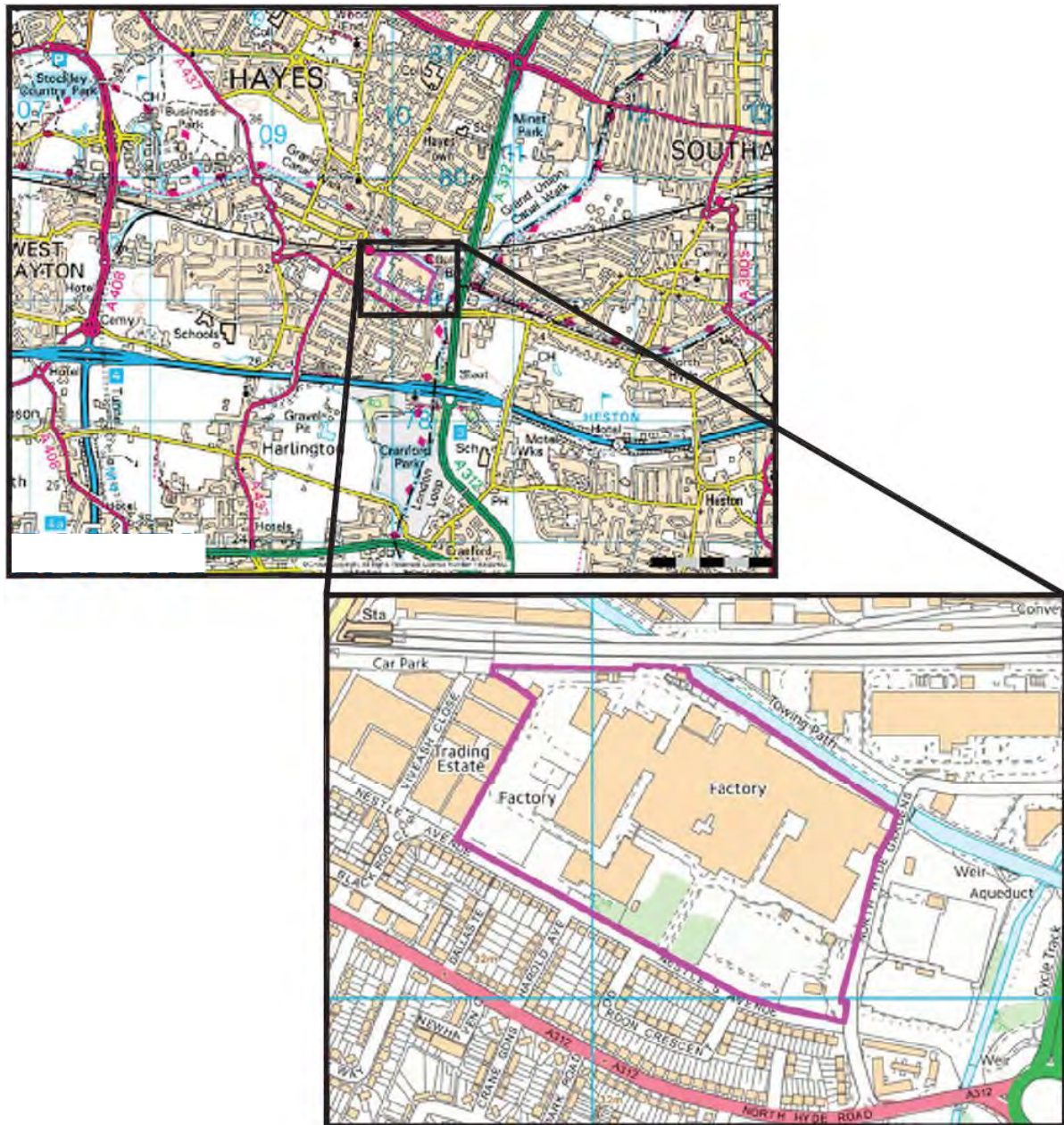
DATE DECEMBER 2015	SCALE 1:500 @ A0	DRAWN AT
STATUS FEASIBILITY	CHECKED AC	

DRAWING NUMBER
30680-FE-73 K

APPENDIX B

SITE LOCATION PLAN

Former Nestle factory, Hayes – Site Location Plan



APPENDIX C

TOPOGRAPHICAL SURVEY



OS Note:
Some services may have been omitted due to parked vehicles.
The Ordnance Survey file is to be used as a guide only.

OS Buildings Surveyed Buildings 

The survey has been undertaken to the Ordnance Survey (O/S) National Grid (OSGB36) via Global Navigational Satellite Systems (GNSS) and the O.S. Active Network (OS Net).

A true OSGB36 coordinate has been established near to the site centre as a transformation using the OSTN02 & OS2002 transformation models.

The survey has been correlated to this point and a further one OSGB36 point established to create a true O.S. bearing for angle orientation.

No scale factor has been applied to the survey therefore the coordinates shown are arbitrary & not true O.S. Coordinates which have a scale factor applied.

Please refer to Survey Station Table to enable establishment of points and stations.

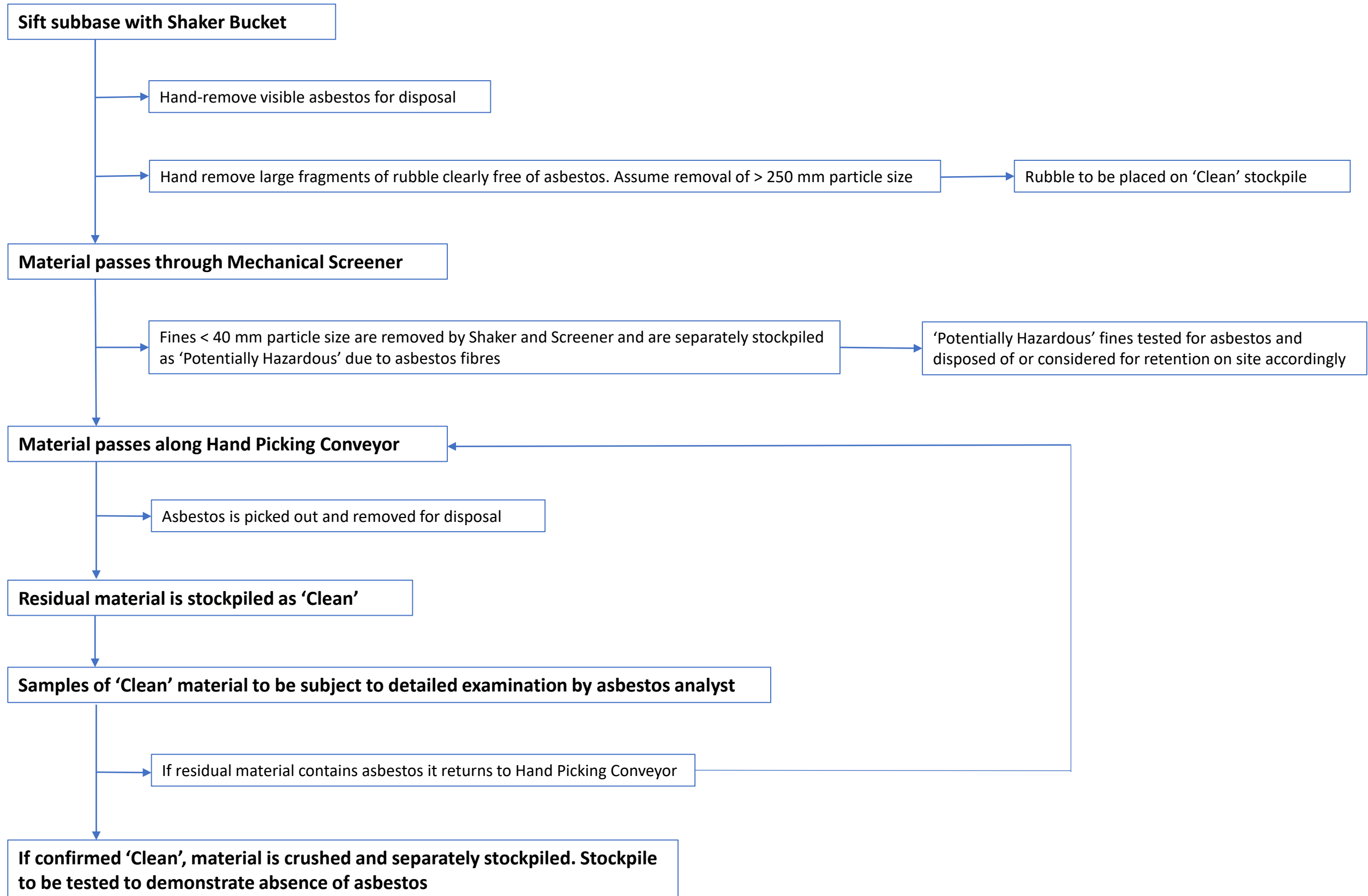
3	08.01.20	Post Demo Survey	JK2	GH660
2	Aug 2019	Post Demolition Survey	JS	Draft
1	29.09.18	Extra detail and levels in north area	GF	
Rev	Date	Description	Drawn	Q. Ref

SEGRO Plc			
PROJECT Former Nestle Factory, Hayes, UB3 4RF			
TITLE Topographical Survey			
SCALE A0@ 1: 500		DATE Oct 2014	
DRAWN AR/LP		QUALITY REF C1263	
Level datum Ordination		See OS Note See OS Note	
Job number 20897			
Drawing No. 20897_OGL			Rev. 3
<i>Comments</i> <i>This plan should only be used for its original purpose. Greenhatch Group accepts no responsibility for this plan if supplied to any party other than the original client.</i> <i>All dimensions should be checked on site prior to design and construction.</i> <i>Drainage information (where applicable) has been visually inspected from the surface and therefore should be treated as approximate only.</i> <i>Notes:</i>			

APPENDIX D

ASBESTOS REMOVAL PROCEDURE FLOW CHART (GREEN BEAN BUILDING)

SEGRO Park, Hayes. Procedure for Removal of Asbestos in Soil



APPENDIX E

LABORATORY ANALYSIS DATA – SOIL TRANSFERED TO PROVECTUS



James Gooding
TRC Companies Ltd
175-185 Grays Inn Rd
London
WC1X 8UE

t: 0207812 0620

e: jgooding@trcsolutions.com



i2 Analytical Ltd.
7 Woodshots Meadow,
Croxley Green
Business Park,
Watford,
Herts,
WD18 8YS

t: 01923 225404

f: 01923 237404

e: reception@i2analytical.com

Analytical Report Number : 19-36231

Replaces Analytical Report Number : 19-36231, issue no. 1

Project / Site name: Nestle, Hayes

Samples received on: 05/04/2019

Your job number: 336967

Samples instructed on: 05/04/2019

Your order number:

Analysis completed by: 11/04/2019

Report Issue Number: 2

Report issued on: 11/04/2019

Samples Analysed: 9 soil samples

Signed:

Dr Claire Stone
Quality Manager
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting
leachates - 2 weeks from reporting
waters - 2 weeks from reporting
asbestos - 6 months from reporting

Excel copies of reports are only valid when accompanied by this PDF certificate.

Analytical Report Number: 19-36231

Project / Site name: Nestle, Hayes

Lab Sample Number				1194501	1194502	1194503	1194504	1194505
Sample Reference				1	2	3	4	5
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				05/04/2019	05/04/2019	05/04/2019	05/04/2019	05/04/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	15	10	9.6	9.4	16
Moisture Content	%	0.001	NONE	8.8	11	9.9	13	13
Total mass of sample received	kg	0.001	NONE	1.5	1.5	1.6	1.6	1.6

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	Chrysotile	Chrysotile	Chrysotile	Chrysotile	Chrysotile
Asbestos in Soil	Type	N/A	ISO 17025	Detected	Detected	Detected	Detected	Detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	< 0.001	< 0.001	< 0.001	0.001	< 0.001
Asbestos Quantification Total	%	0.001	ISO 17025	< 0.001	< 0.001	< 0.001	0.001	< 0.001

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	10.2	8.7	8.8	8.9	9.2
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1	< 1
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	3700	4000	2300	4200	4600
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	1.8	2.0	1.1	2.1	2.3
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	1840	2020	1130	2090	2300
Organic Matter	%	0.1	MCERTS	2.1	2.4	2.4	2.6	2.1
Total Organic Carbon (TOC)	%	0.1	MCERTS	1.2	1.4	1.4	1.5	1.2

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	5.2	0.59	0.70	0.29
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	0.95	0.76	0.70	0.47
Acenaphthene	mg/kg	0.05	MCERTS	0.24	6.5	0.80	2.0	0.99
Fluorene	mg/kg	0.05	MCERTS	0.22	7.2	0.95	2.4	1.2
Phenanthrene	mg/kg	0.05	MCERTS	3.4	79	8.8	18	11
Anthracene	mg/kg	0.05	MCERTS	0.70	16	2.0	4.2	2.7
Fluoranthene	mg/kg	0.05	MCERTS	5.7	67	12	19	15
Pyrene	mg/kg	0.05	MCERTS	4.8	54	10	15	12
Benzo(a)anthracene	mg/kg	0.05	MCERTS	2.9	30	6.1	8.3	6.7
Chrysene	mg/kg	0.05	MCERTS	2.5	26	4.4	7.2	5.9
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	2.9	29	6.5	7.6	6.3
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	1.5	12	2.2	4.2	3.7
Benzo(a)pyrene	mg/kg	0.05	MCERTS	2.6	23	5.3	6.8	5.7
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	1.7	13	3.4	4.2	3.3
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	0.45	4.0	0.91	1.2	0.94
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	2.0	15	4.1	4.9	3.8

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	31.6	388	68.9	107	80.5
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Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	16	16	17	17	18
Boron (water soluble)	mg/kg	0.2	MCERTS	5.1	6.5	5.7	4.4	6.6
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.4	0.5	2.0	0.4	0.5
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Chromium (III)	mg/kg	1	NONE	26	26	23	36	24
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	26	27	24	36	24
Copper (aqua regia extractable)	mg/kg	1	MCERTS	63	80	69	94	71
Lead (aqua regia extractable)	mg/kg	1	MCERTS	670	740	810	860	720
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	0.5	0.9	2.3	1.6
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	23	27	26	25	24
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	230	240	620	280	240

Analytical Report Number: 19-36231

Project / Site name: Nestle, Hayes

Lab Sample Number				1194501	1194502	1194503	1194504	1194505
Sample Reference				1	2	3	4	5
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				05/04/2019	05/04/2019	05/04/2019	05/04/2019	05/04/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		

Monoaromatics & Oxygenates

Benzene	ug/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	ug/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	ug/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	ug/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	ug/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	ug/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Petroleum Hydrocarbons

Petroleum Range Organics (C6 - C10)	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
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TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	5.1	6.9	5.5	13	6.1
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	33	34	43	53	35
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	130	130	170	220	120
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	170	170	220	290	160

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	8.2	4.2	8.9	6.4
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	52	16	20	18
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	37	350	89	130	100
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	180	390	210	240	210
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	220	810	320	400	330

Analytical Report Number: 19-36231

Project / Site name: Nestle, Hayes

Lab Sample Number				1194506	1194507	1194508	1194509	
Sample Reference				5a	6	7	8	
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	
Date Sampled				05/04/2019	05/04/2019	05/04/2019	05/04/2019	
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	-	16	26	18	
Moisture Content	%	0.001	NONE	-	11	10	11	
Total mass of sample received	kg	0.001	NONE	-	1.6	1.6	1.5	

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	Chrysotile	Chrysotile	Chrysotile	Chrysotile	
Asbestos in Soil	Type	N/A	ISO 17025	Detected	Detected	Detected	Detected	
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	< 0.001	0.003	< 0.001	< 0.001	
Asbestos Quantification Total	%	0.001	ISO 17025	< 0.001	0.003	< 0.001	< 0.001	

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	-	9.2	9.7	10.7	
Total Cyanide	mg/kg	1	MCERTS	-	< 1	< 1	< 1	
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	-	4200	4000	4000	
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	-	2.1	2.0	2.0	
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	-	2090	2020	2020	
Organic Matter	%	0.1	MCERTS	-	2.2	1.7	1.9	
Total Organic Carbon (TOC)	%	0.1	MCERTS	-	1.3	1.0	1.1	

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	-	0.43	< 0.05	< 0.05	
Acenaphthylene	mg/kg	0.05	MCERTS	-	0.39	< 0.05	< 0.05	
Acenaphthene	mg/kg	0.05	MCERTS	-	1.3	0.27	0.34	
Fluorene	mg/kg	0.05	MCERTS	-	1.4	0.33	0.34	
Phenanthrene	mg/kg	0.05	MCERTS	-	13	3.6	4.8	
Anthracene	mg/kg	0.05	MCERTS	-	3.2	0.91	1.4	
Fluoranthene	mg/kg	0.05	MCERTS	-	15	5.7	8.5	
Pyrene	mg/kg	0.05	MCERTS	-	12	4.9	7.2	
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	7.1	2.8	4.3	
Chrysene	mg/kg	0.05	MCERTS	-	5.3	2.6	2.9	
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	-	6.0	3.4	3.7	
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	-	3.3	1.3	2.2	
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	5.2	2.7	3.4	
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	3.0	1.7	2.3	
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	0.91	0.54	0.69	
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	3.6	2.1	2.8	

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	-	82.2	32.6	44.6	
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Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	-	17	18	19	
Boron (water soluble)	mg/kg	0.2	MCERTS	-	7.7	8.3	4.7	
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	-	0.3	0.4	0.6	
Chromium (hexavalent)	mg/kg	4	MCERTS	-	< 4.0	< 4.0	< 4.0	
Chromium (III)	mg/kg	1	NONE	-	18	23	24	
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	-	18	24	24	
Copper (aqua regia extractable)	mg/kg	1	MCERTS	-	47	63	73	
Lead (aqua regia extractable)	mg/kg	1	MCERTS	-	720	570	740	
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	-	0.7	< 0.3	1.1	
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	-	22	36	24	
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0	
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	-	250	370	330	

Analytical Report Number: 19-36231

Project / Site name: Nestle, Hayes

Lab Sample Number	1194506	1194507	1194508	1194509	
Sample Reference	5a	6	7	8	
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	
Depth (m)	None Supplied	None Supplied	None Supplied	None Supplied	
Date Sampled	05/04/2019	05/04/2019	05/04/2019	05/04/2019	
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		

Monoaromatics & Oxygenates

Benzene	ug/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0	
Toluene	ug/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0	
Ethylbenzene	ug/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0	
p & m-xylene	ug/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0	
o-xylene	ug/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0	
MTBE (Methyl Tertiary Butyl Ether)	ug/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0	

Petroleum Hydrocarbons

Petroleum Range Organics (C6 - C10)	mg/kg	0.1	MCERTS	-	< 0.1	< 0.1	< 0.1	
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TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	-	< 0.001	< 0.001	< 0.001	
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	-	< 0.001	< 0.001	< 0.001	
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	-	< 0.001	< 0.001	< 0.001	
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0	
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	-	2.9	2.3	5.5	
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	-	29	20	33	
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	-	130	79	140	
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	-	160	100	170	

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	-	< 0.001	< 0.001	< 0.001	
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	-	< 0.001	< 0.001	< 0.001	
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	-	< 0.001	< 0.001	< 0.001	
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	-	2.0	2.7	6.4	
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	-	10	4.4	13	
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	-	57	25	67	
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	-	110	61	210	
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	-	180	92	300	



Analytical Report Number: **19-36231**
Project / Site name: **Nestle, Hayes**
Your Order No:

Certificate of Analysis - Asbestos Quantification

Methods:

Qualitative Analysis

The samples were analysed qualitatively for asbestos by polarising light and dispersion staining as described by the Health and Safety Executive in HSG 248.

Quantitative Analysis

The analysis was carried out using our documented in-house method A006 based on HSE Contract Research Report No: 83/1996: Development and Validation of an analytical method to determine the amount of asbestos in soils and loose aggregates (Davies et al, 1996) and HSG 248. Our method includes initial examination of the entire representative sample, then fractionation and detailed analysis of each fraction, with quantification by hand picking and weighing.

The limit of detection (reporting limit) of this method is 0.001 %.

The method has been validated using samples of at least 100 g, results for samples smaller than this should be interpreted with caution.

Both Qualitative and Quantitative Analyses are UKAS accredited.

Sample Number	Sample ID	Sample Depth (m)	Sample Weight (g)	Asbestos Containing Material Types Detected (ACM)	PLM Results	Asbestos by hand picking/weighing (%)	Total % Asbestos in Sample
1194501	1		134	Loose Fibres	Chrysotile	< 0.001	< 0.001
1194502	2		170	Loose Fibrous Debris	Chrysotile	< 0.001	< 0.001
1194503	3		158	Loose Fibres	Chrysotile	< 0.001	< 0.001
1194504	4		134	Loose Fibrous Debris	Chrysotile	0.001	0.001
1194505	5		132	Loose Fibres	Chrysotile	< 0.001	< 0.001
1194506	5a		100	Loose Fibres	Chrysotile	< 0.001	< 0.001
1194507	6		139	Loose Fibrous Debris	Chrysotile	0.003	0.003
1194508	7		133	Loose Fibrous Debris	Chrysotile	< 0.001	< 0.001
1194509	8		131	Loose Fibres	Chrysotile	< 0.001	< 0.001

Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.



Analytical Report Number : 19-36231

Project / Site name: Nestle, Hayes

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
1194501	1	None Supplied	None Supplied	Grey loam and gravel with stones and brick.
1194502	2	None Supplied	None Supplied	Grey loam and gravel with stones.
1194503	3	None Supplied	None Supplied	Grey loam and gravel with stones and brick.
1194504	4	None Supplied	None Supplied	Grey loam and gravel with stones and brick.
1194505	5	None Supplied	None Supplied	Grey loam and gravel with stones and brick.
1194506	5a	None Supplied	None Supplied	-
1194507	6	None Supplied	None Supplied	Grey loam and gravel with stones and brick.
1194508	7	None Supplied	None Supplied	Grey loam and gravel with stones and brick.
1194509	8	None Supplied	None Supplied	Grey loam and gravel with stones.

Analytical Report Number : 19-36231

Project / Site name: Nestle, Hayes

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Asbestos Quantification - Gravimetric	Asbestos quantification by gravimetric method - in house method based on references.	HSE Report No: 83/1996, HSG 248, HSG 264 & SCA Blue Book (draft).	A006-PL	D	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
BTEX and MTBE in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS
Cr (III) in soil	In-house method by calculation from total Cr and Cr VI.	In-house method by calculation	L080-PL	W	NONE
D.O. for Gravimetric Quant if Screen/ID positive	Dependent option for Gravimetric Quant if Screen/ID positive scheduled.	In house asbestos methods A001 & A006.	A006-PL	D	NONE
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazine followed by colorimetry.	In-house method	L080-PL	W	MCERTS
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 2, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
Organic matter (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	BS1377 Part 3, 1990, Chemical and Electrochemical Tests""	L009-PL	D	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L099-PL	D	MCERTS
PRO (Soil)	Determination of hydrocarbons C6-C10 by headspace GC-MS.	In-house method based on USEPA8260	L088-PL	W	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests, 2:1 water:soil extraction, analysis by ICP-OES.	L038-PL	D	MCERTS
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Total organic carbon (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests""	L009-PL	D	MCERTS

Iss No 19-36231-2 Nestle, Hayes 336967

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The results included within the report are representative of the samples submitted for analysis.

Page 8 of 9



Analytical Report Number : 19-36231

Project / Site name: Nestle, Hayes

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
TPHCWG (Soil)	Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method with silica gel split/clean up.	L088/76-PL	W	MCERTS

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.

For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

APPENDIX F

TRIAL PIT LOGS AND LOCATION PLAN



BOREHOLE LOG

BH NO. TPE1

Page 1 of 1

Facility/Project Name: Nestle, Hayes		Date Borehole Started: 12-4-19	Date Borehole Completed: 12-4-19	Project Number: 336967.0000.0000	
Drilling Firm:	Drilling Method:	Surface Elev. (m) ---	TOC Elevation (m) ---	Total Depth (m bgs) 1.0	Borehole Dia. (cm)
Boring Location:		Personnel Logged By - Abi Li Driller -		Drilling Equipment:	
Civil Town/City/or Village: Hayes	County: London	Water Level Observations: While Drilling: Date/Time After Drilling: Date/Time		Depth (m bgs) Depth (m bgs)	

SAMPLE		SPT N VALUE	DEPTH IN METERS	LITHOLOGIC DESCRIPTION	USCS	GRAPHIC LOG	COMMENTS
NUMBER AND TYPE	RECOVERY (%)						
LAB				MADE GROUND: Dark brown sandy GRAVEL. Sand is fine to coarse. Gravel is subangular to angular medium to coarse brick, concrete and chert.			... Below 0.1mbgl: occasional pockets of black clay with increasing depth.
LAB			1				

METRIC BOREHOLE LOG (NON-U.S.) NESTLE HAYES TRIAL PITS.GPJ 6-6-19

Signature:	Firm: TRC London 175-185 Gray's Inn Road, London, WC1X 8UE	0207 812 0620 Fax
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BOREHOLE LOG

BH NO. TPE4

Page 1 of 1

Facility/Project Name: Nestle, Hayes		Date Borehole Started: 12-4-19	Date Borehole Completed: 12-4-19	Project Number: 336967.0000.0000	
Drilling Firm:	Drilling Method:	Surface Elev. (m) ---	TOC Elevation (m) ---	Total Depth (m bgs) 1.0	Borehole Dia. (cm)
Boring Location:		Personnel Logged By - Abi Li Driller -		Drilling Equipment:	
Civil Town/City/or Village: Hayes	County: London	Water Level Observations: While Drilling: Date/Time After Drilling: Date/Time		Depth (m bgs) Depth (m bgs)	

SAMPLE		SPT N VALUE	DEPTH IN METERS	LITHOLOGIC DESCRIPTION	USCS	GRAPHIC LOG	COMMENTS
NUMBER AND TYPE	RECOVERY (%)						
LAB				MADE GROUND: Dark brown sandy GRAVEL. Sand is fine to coarse. Gravel is subangular to angular medium to coarse brick, concrete and chert.			... Below 0.1mbgl: occasional pockets of black clay with increasing depth.
LAB			1	MADE GROUND: Dark brown to black clayey slightly gravelly SAND. Sand is fine to coarse. Gravel is subangular to angular fine to medium brick and concrete.			

METRIC BOREHOLE LOG (NON-U.S.) NESTLE HAYES TRIAL PITS.GPJ 6-6-19

Signature:	Firm: TRC London 175-185 Gray's Inn Road, London, WC1X 8UE	0207 812 0620 Fax
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BOREHOLE LOG

BH NO. TPE5

Page 1 of 1

Facility/Project Name: Nestle, Hayes		Date Borehole Started: 12-4-19	Date Borehole Completed: 12-4-19	Project Number: 336967.0000.0000	
Drilling Firm:	Drilling Method:	Surface Elev. (m) ---	TOC Elevation (m) ---	Total Depth (m bgs) 1.0	Borehole Dia. (cm)
Boring Location:		Personnel Logged By - Abi Li Driller -		Drilling Equipment:	
Civil Town/City/or Village: Hayes	County: London	Water Level Observations: While Drilling: Date/Time After Drilling: Date/Time		Depth (m bgs) Depth (m bgs)	

SAMPLE		SPT N VALUE	DEPTH IN METERS	LITHOLOGIC DESCRIPTION	USCS	GRAPHIC LOG	COMMENTS
NUMBER AND TYPE	RECOVERY (%)						
				MADE GROUND: Light yellowish brown sandy GRAVEL. Sand is fine to coarse. Gravel is subangular to angular medium to coarse brick, concrete and chert.			... Between 0.1 and 0.5mbgl: occasional pockets of dark brown clay.
LAB				MADE GROUND: Dark brown to black CLAY.			... Below 0.5mbgl: possible odour.
			1				
LAB							

METRIC BOREHOLE LOG (NON-U.S.) NESTLE HAYES TRIAL PITS.GPJ 6-6-19

Signature:	Firm: TRC London 175-185 Gray's Inn Road, London, WC1X 8UE	0207 812 0620 Fax
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BOREHOLE LOG

BH NO. TPE6

Page 1 of 1

Facility/Project Name: Nestle, Hayes		Date Borehole Started: 6-6-19	Date Borehole Completed: 6-6-19	Project Number: 336967.0000.0000	
Drilling Firm:	Drilling Method:	Surface Elev. (m) ---	TOC Elevation (m) ---	Total Depth (m bgs) 1.0	Borehole Dia. (cm)
Boring Location:		Personnel Logged By - Colin Morton Driller -		Drilling Equipment:	
Civil Town/City/or Village: Hayes	County: London	Water Level Observations: While Drilling: Date/Time After Drilling: Date/Time		Depth (m bgs) Depth (m bgs)	

SAMPLE		SPT N VALUE	DEPTH IN METERS	LITHOLOGIC DESCRIPTION	USCS	GRAPHIC LOG	COMMENTS
NUMBER AND TYPE	RECOVERY (%)						
				MADE GROUND: Dark brown very sandy GRAVEL. Sand is fine to coarse. Gravel is subangular to angular, fine to coarse.			
				MADE GROUND: Black Bituminous Material. Bitumen odour.			
				MADE GROUND: Red and yellow brick fragments.			
				MADE GROUND: Soft dark brown to black sandy, very gravelly CLAY. Sand is fine to coarse. Gravel is subangular to angular medium to coarse brick, concrete and chert. Rare glass fragments.			
LAB							
			1				
LAB							

METRIC BOREHOLE LOG (NON-U.S.) NESTLE HAYES TRIAL PITS.GPJ 6-6-19

Signature:	Firm: TRC London 175-185 Gray's Inn Road, London, WC1X 8UE	0207 812 0620 Fax
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BOREHOLE LOG

BH NO. TPE7

Page 1 of 1

Facility/Project Name: Nestle, Hayes		Date Borehole Started: 6-6-19	Date Borehole Completed: 6-6-19	Project Number: 336967.0000.0000	
Drilling Firm:	Drilling Method:	Surface Elev. (m) ---	TOC Elevation (m) ---	Total Depth (m bgs) 1.0	Borehole Dia. (cm)
Boring Location:		Personnel Logged By - Colin Morton Driller -		Drilling Equipment:	
Civil Town/City/or Village: Hayes	County: London	Water Level Observations: While Drilling: Date/Time After Drilling: Date/Time		Depth (m bgs) Depth (m bgs)	

SAMPLE		SPT N VALUE	DEPTH IN METERS	LITHOLOGIC DESCRIPTION	USCS	GRAPHIC LOG	COMMENTS
NUMBER AND TYPE	RECOVERY (%)						
LAB				MADE GROUND: Dark brown very sandy GRAVEL. Sand is fine to coarse. Gravel is subangular to angular, fine to coarse.			
				MADE GROUND: Black Bituminous Material. Bitumen odour.			
				MADE GROUND: Red and yellow brick fragments.			
				MADE GROUND: Soft dark brown to black sandy, very gravelly CLAY. Sand is fine to coarse. Gravel is subangular to angular medium to coarse brick, concrete and chert.			
LAB			1				

METRIC BOREHOLE LOG (NON-U.S.) NESTLE HAYES TRIAL PITS.GPJ 6-6-19

Signature:	Firm: TRC London 175-185 Gray's Inn Road, London, WC1X 8UE	0207 812 0620 Fax
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BOREHOLE LOG

BH NO. TPE8

Page 1 of 1

Facility/Project Name: Nestle, Hayes		Date Borehole Started: 6-6-19	Date Borehole Completed: 6-6-19	Project Number: 336967.0000.0000	
Drilling Firm:	Drilling Method:	Surface Elev. (m) ---	TOC Elevation (m) ---	Total Depth (m bgs) 1.0	Borehole Dia. (cm)
Boring Location:		Personnel Logged By - Colin Morton Driller -		Drilling Equipment:	
Civil Town/City/or Village: Hayes	County: London	Water Level Observations: While Drilling: Date/Time After Drilling: Date/Time		Depth (m bgs) Depth (m bgs)	

SAMPLE		SPT N VALUE	DEPTH IN METERS	LITHOLOGIC DESCRIPTION	USCS	GRAPHIC LOG	COMMENTS
NUMBER AND TYPE	RECOVERY (%)						
LAB				MADE GROUND: Dark brown very sandy GRAVEL. Sand is fine to coarse. Gravel is subangular to angular, fine to coarse.			
				MADE GROUND: Black Bituminous Material. Bitumen odour.			
				MADE GROUND: Red and yellow brick fragments.			
				MADE GROUND: Soft dark to light brown sandy, very gravelly CLAY. Sand is fine to coarse. Gravel is subangular to angular medium to coarse brick, concrete and chert.			
LAB			1				

METRIC BOREHOLE LOG (NON-U.S.) NESTLE HAYES TRIAL PITS.GPJ 6-6-19

Signature:	Firm: TRC London 175-185 Gray's Inn Road, London, WC1X 8UE	0207 812 0620 Fax
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**BOREHOLE LOG****BH NO. TPE9**

Page 1 of 1

Facility/Project Name: Nestle, Hayes				Date Borehole Started: 6-6-19		Date Borehole Completed: 6-6-19		Project Number: 336967.0000.0000									
Drilling Firm:		Drilling Method:		Surface Elev. (m) ---		TOC Elevation (m) ---		Total Depth (m bgs) 1.0		Borehole Dia. (cm)							
Boring Location:				Personnel Logged By - Colin Morton Driller -				Drilling Equipment:									
Civil Town/City/or Village: Hayes		County: London		Water Level Observations: While Drilling: Date/Time After Drilling: Date/Time				Depth (m bgs) Depth (m bgs)									
SAMPLE																	
NUMBER AND TYPE		RECOVERY (%)		SPT N VALUE		DEPTH IN METERS		LITHOLOGIC DESCRIPTION				USCS		GRAPHIC LOG		COMMENTS	
								MADE GROUND: Dark brown very sandy GRAVEL. Sand is fine to coarse. Gravel is subangular to angular, fine to coarse.									
LAB								MADE GROUND: Black bituminous material. Bitumen odour.									
								MADE GROUND: Red and yellow brick fragments.									
LAB								MADE GROUND: Soft dark to light brown sandy, very gravelly CLAY. Sand is fine to coarse. Gravel is subangular to angular medium to coarse brick, concrete and chert.									
						1											

METRIC BOREHOLE LOG (NON-U.S.) NESTLE HAYES TRIAL PITS.GPJ 6-6-19

**BOREHOLE LOG****BH NO. TPE11**

Page 1 of 1

Facility/Project Name: Nestle, Hayes		Date Borehole Started: 6-6-19	Date Borehole Completed: 6-6-19	Project Number: 336967.0000.0000	
Drilling Firm:	Drilling Method:	Surface Elev. (m) ---	TOC Elevation (m) ---	Total Depth (m bgs) 1.0	Borehole Dia. (cm)
Boring Location:		Personnel Logged By - Colin Morton Driller -		Drilling Equipment:	
Civil Town/City/or Village: Hayes	County: London	Water Level Observations: While Drilling: Date/Time After Drilling: Date/Time		Depth (m bgs) Depth (m bgs)	

SAMPLE		SPT N VALUE	DEPTH IN METERS	LITHOLOGIC DESCRIPTION	USCS	GRAPHIC LOG	COMMENTS
NUMBER AND TYPE	RECOVERY (%)						
				MADE GROUND: Dark brown very sandy GRAVEL. Sand is fine to coarse. Gravel is subangular to angular, fine to coarse.			
				MADE GROUND: Black bituminous material. Bitumen odour.			
				MADE GROUND: Red and yellow brick fragments.			
LAB				MADE GROUND: Soft dark to light brown sandy, very gravelly CLAY. Sand is fine to coarse. Gravel is subangular to angular medium to coarse brick, concrete and chert.			
			1				
LAB							

METRIC BOREHOLE LOG (NON-U.S.) NESTLE HAYES TRIAL PITS.GPJ 6-6-19

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TRIAL PITTING LOG

TRIAL PIT NO. TP402

Page 1 of 1

Facility/Project Name: Nestle Hayes		Date Drilling Started: 21-5-19	Date Drilling Completed: 21-5-19	Project Number: 336967.0002.0000
Contractor:	Excavation Method: Machine Dug	Surface Elev. (m) ---	TOC Elevation (m) ---	Total Depth (m bgs) 0.8
Trial Pit Location:		Personnel Logged By - Trial Pitter -		Excavation Equipment:
Civil Town/City/or Village:	County:	Water Level Observations: While Drilling: Date/Time After Drilling: Date/Time		Depth (m bgs) Depth (m bgs)

SAMPLE		SPT N VALUE	DEPTH IN METERS	LITHOLOGIC DESCRIPTION	USCS	GRAPHIC LOG	COMMENTS
NUMBER AND TYPE	RECOVERY (%)						
LAB				HARD STANDING. Reinforced concrete.			
				MADE GROUND. Yellow brown SANDS and GRAVELS possible FILL. Sand is fine to coarse, gravel is fine to coarse and sub angular.			
				MADE GROUND. Black brown sandy clayey GRAVEL. Sand is fine to coarse, gravel is fine to coarse. Gravel is mostly composed of crushed concrete and occasional brick. Occasional cobble sized fragments brick and concrete.			
LAB				Dark brown slightly gravelly CLAY. Gravel is fine to medium and rounded.			Groundwater seepage at 0.75m bgl. Groundwater oily slick/scum on the surface.
			1				

TRIAL PITTING LOG (METRIC) NESTLE HAYES JG FURTHER TP.GPJ 336967.0002.0000 5-6-19

Signature:	Firm: TRC Solutions	Fax
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TRIAL PITTING LOG

TRIAL PIT NO. TP403

Page 1 of 1

Facility/Project Name: Nestle Hayes		Date Drilling Started: 21-5-19	Date Drilling Completed: 21-5-19	Project Number: 336967.0002.0000
Contractor:	Excavation Method: Machine Dug	Surface Elev. (m) ---	TOC Elevation (m) ---	Total Depth (m bgs) 1.1
Trial Pit Location:		Personnel Logged By - Trial Pitter -		Excavation Equipment:
Civil Town/City/or Village:	County:	Water Level Observations: While Drilling: Date/Time After Drilling: Date/Time		Depth (m bgs) Depth (m bgs)

SAMPLE		SPT N VALUE	DEPTH IN METERS	LITHOLOGIC DESCRIPTION	USCS	GRAPHIC LOG	COMMENTS
NUMBER AND TYPE	RECOVERY (%)						
LAB				HARD STANDING. Reinforced concrete.			
				MADE GROUND. Sandy GRAVEL becoming clayey at 0.8m bgl. Sand is fine to coarse, gravel is fine to coarse. Gravel is mostly composed of crushed concrete and occasional brick.			
LAB			1				Concrete obstruction at 1.05m bgl possible drainage.

Signature:	Firm: TRC Solutions	Fax
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TRIAL PITTING LOG (METRIC) NESTLE HAYES JG FURTHER TP.GPJ 336967.0002.0000 5-6-19



TRIAL PITTING LOG

TRIAL PIT NO. TP404

Page 1 of 1

Facility/Project Name: Nestle Hayes		Date Drilling Started: 21-5-19	Date Drilling Completed: 21-5-19	Project Number: 336967.0002.0000
Contractor:	Excavation Method: Machine Dug	Surface Elev. (m) ---	TOC Elevation (m) ---	Total Depth (m bgs) 1.7
Trial Pit Location:		Personnel Logged By - Trial Pitter -		Excavation Equipment:
Civil Town/City/or Village:	County:	Water Level Observations: While Drilling: Date/Time After Drilling: Date/Time		Depth (m bgs) Depth (m bgs)

SAMPLE		SPT N VALUE	DEPTH IN METERS	LITHOLOGIC DESCRIPTION	USCS	GRAPHIC LOG	COMMENTS
NUMBER AND TYPE	RECOVERY (%)						
LAB				HARD STANDING. Reinforced concrete.			
			1	Brown becoming black slightly clayey gravelly becoming slightly gravelly clayey SAND. Sand is fine to coarse, gravel is fine to coarse. Gravel is mostly angular and anthropogenic. Gravel and occasional cobble content is composed of crushed concrete, brick, pipes and metal.			
				Black CLAY.			Oily odour between 0.5-1.5m bgl.
							Groundwater seepage into bottom of the pit at 1.7m bgl.

TRIAL PITTING LOG (METRIC) NESTLE HAYES JG FURTHER TP.GPJ 336967.0002.0000 5-6-19

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TRIAL PITTING LOG

TRIAL PIT NO. TP406

Page 1 of 1

Facility/Project Name: Nestle Hayes		Date Drilling Started: 22-5-19	Date Drilling Completed: 22-5-19	Project Number: 336967.0002.0000
Contractor:	Excavation Method: Machine Dug	Surface Elev. (m) ---	TOC Elevation (m) ---	Total Depth (m bgs) 1.0
Trial Pit Location:		Personnel Logged By - Trial Pitter -		Excavation Equipment:
Civil Town/City/or Village:	County:	Water Level Observations: While Drilling: Date/Time After Drilling: Date/Time		Depth (m bgs) Depth (m bgs)

SAMPLE		SPT N VALUE	DEPTH IN METERS	LITHOLOGIC DESCRIPTION	USCS	GRAPHIC LOG	COMMENTS
NUMBER AND TYPE	RECOVERY (%)						
LAB			1	HARD STANDING. Asphalt.		///	
				MADE GROUND. Yellow becoming grey sandy GRAVEL suspected FILL. Sand is fine to coarse, gravel is fine to coarse and well rounded. Occasional cobbles sized fragments of brick and concrete.		///	
				MADE GROUND. Black slightly clayey gravelly SAND. Sand is fine to coarse, gravel is fine to coarse and subangular. Gravel and occasional cobbles are composed of crushed brick and concrete. Wood fragments found throughout the strata.		///	
				Dark brown slightly gravelly CLAY. Gravel is fine to medium and rounded.		///	

Signature:	Firm: TRC Solutions	Fax
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TRIAL PITTING LOG (METRIC) NESTLE HAYES JG FURTHER TP.GPJ 336967.0002.0000 5-6-19



TRIAL PITTING LOG

TRIAL PIT NO. TP411

Page 1 of 1

Facility/Project Name: Nestle Hayes		Date Drilling Started: 20-5-19	Date Drilling Completed: 20-5-19	Project Number: 336967.0002.0000
Contractor:	Excavation Method: Machine Dug	Surface Elev. (m) ---	TOC Elevation (m) ---	Total Depth (m bgs) 1.0
Trial Pit Location:		Personnel Logged By - Trial Pitter -		Excavation Equipment:
Civil Town/City/or Village:	County:	Water Level Observations: While Drilling: Date/Time After Drilling: Date/Time		Depth (m bgs) Depth (m bgs)

SAMPLE		SPT N VALUE	DEPTH IN METERS	LITHOLOGIC DESCRIPTION	USCS	GRAPHIC LOG	COMMENTS
NUMBER AND TYPE	RECOVERY (%)						
LAB				HARD STANDING. Reinforced Concrete.			
				MADE GROUND. Black brown becoming black gravelly SAND becoming clayey at depth. Sand is fine to coarse, gravel is fine to coarse and subangular to angular. Gravel is composed of mostly anthropogenic components including brick, concrete and metal. Occasional cobble sized fragments of brick, concrete and rebar.			
				Black gravelly CLAY. Gravel is fine to medium and rounded.			Between 0.4 to 0.85m bgl there was a oily odour.
			1				

Signature:	Firm: TRC Solutions	Fax
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TRIAL PITTING LOG (METRIC) NESTLE HAYES JG FURTHER TP.GPJ 336967.0002.0000 5-6-19



TRIAL PITTING LOG

TRIAL PIT NO. TP413

Page 1 of 1

Facility/Project Name: Nestle Hayes		Date Drilling Started: 20-5-19	Date Drilling Completed: 20-5-19	Project Number: 336967.0002.0000
Contractor:	Excavation Method: Machine Dug	Surface Elev. (m) ---	TOC Elevation (m) ---	Total Depth (m bgs) 1.6
Trial Pit Location:		Personnel Logged By - Trial Pitter -		Excavation Equipment:
Civil Town/City/or Village:	County:	Water Level Observations: While Drilling: Date/Time After Drilling: Date/Time		Depth (m bgs) Depth (m bgs)

SAMPLE		SPT N VALUE	DEPTH IN METERS	LITHOLOGIC DESCRIPTION	USCS	GRAPHIC LOG	COMMENTS
NUMBER AND TYPE	RECOVERY (%)						
LAB				HARD STANDING. Asphalt			
			1	MADE GROUND. Light brown mottled grey occasionally clayey gravelly SAND. Sand is fine to coarse, gravel is fine to coarse and subangular to angular. Gravel is composed of mostly anthropogenic components including brick, concrete and metal. Occasional cobble sized fragments of brick and concrete.			
				Black gravelly CLAY. Gravel is fine to medium and rounded.			

Signature:	Firm: TRC Solutions	Fax
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TRIAL PITTING LOG (METRIC) NESTLE HAYES JG FURTHER TP.GPJ 336967.0002.0000 5-6-19



TRIAL PITTING LOG

TRIAL PIT NO. TP414

Page 1 of 1

Facility/Project Name: Former Nestle Factory, Hayes		Date Drilling Started: 13-5-19	Date Drilling Completed: 13-5-19	Project Number: 336967.0000.0000
Contractor: Squibb Group	Excavation Method: Excavator (360)	Surface Elev. (m) ---	TOC Elevation (m) ---	Total Depth (m bgs) 1.5
Trial Pit Location:		Personnel Logged By - Troy Randall Trial Pitter -		Excavation Equipment:
Civil Town/City/or Village: Middlesex	County:	Water Level Observations: While Drilling: Date/Time After Drilling: Date/Time		Depth (m bgs) Depth (m bgs)

SAMPLE		SPT N VALUE	DEPTH IN METERS	LITHOLOGIC DESCRIPTION	USCS	GRAPHIC LOG	COMMENTS
NUMBER AND TYPE	RECOVERY (%)						
				Asphalt / Concrete.			
LAB				MADE GROUND: Orange gravelly SAND. Sand is medium to coarse. Gravel is very angular to well rounded fine to coarse flint, brick and concrete.			
				MADE GROUND: Dry and friable brown very sandy slightly gravelly CLAY. Sand is fine to medium. Gravel is subangular to very angular fine to coarse flint, brick, concrete and slate with metal and plastic fragments.			... Between 0.4 - 1.3mbgl: asbestos fragments identified (asbestos surveyor in attendance confirms it is asbestos).
LAB			1				
				Brownish orange clayey sandy GRAVEL. Sand is medium to coarse. Gravel is subangular to well rounded fine to coarse flint and chert.			

Signature:	Firm: TRC Solutions	Fax
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Checked By: Troy Randall

TRIAL PITTING LOG (METRIC) TRIAL PITTING 14_05_19.GPJ 28-5-19

TRIAL PITTING LOG (METRIC) TRIAL PITTING 14 05 19.GPJ 28-5-19

TRIAL PITTING LOG (METRIC) TRIAL PITTING 14 05 19.GPJ 28-5-19



TRIAL PITTING LOG

TRIAL PIT NO. TP417

Page 1 of 1

Facility/Project Name: Former Nestle Factory, Hayes		Date Drilling Started: 13-5-19		Date Drilling Completed: 13-5-19		Project Number: 336967.0000.0000			
Contractor: Squibb Group		Excavation Method: Excavator (360)		Surface Elev. (m) ---		TOC Elevation (m) ---		Total Depth (m bgs) 0.9	
Trial Pit Location:				Personnel Logged By - Troy Randall Trial Pitter -			Excavation Equipment:		
Civil Town/City/or Village: Middlesex		County:		Water Level Observations: While Drilling: Date/Time After Drilling: Date/Time				Depth (m bgs) Depth (m bgs)	

SAMPLE		SPT N VALUE	DEPTH IN METERS	LITHOLOGIC DESCRIPTION	USCS	GRAPHIC LOG	COMMENTS
NUMBER AND TYPE	RECOVERY (%)						
				Concrete / Asphalt.			
LAB				MADE GROUND: Black slightly sandy GRAVEL. Sand is fine. Gravel is subangular to very angular fine to coarse brick, concrete and asphalt.			
				MADE GROUND: Brown mottled red sandy GRAVEL. Sand is fine. Gravel is angular to very angular fine to coarse brick, concrete and asphalt.			
LAB				Soft light brown sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is angular to subrounded fine to medium flint and chert.			
			1				

Signature:	Firm: TRC Solutions	Fax
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Checked By: Troy Randall

TRIAL PITTING LOG (METRIC) TRIAL PITTING 14_05_19.GPJ 28-5-19



TRIAL PITTING LOG

TRIAL PIT NO. TP418

Page 1 of 1

Facility/Project Name: Nestle Hayes		Date Drilling Started: 24-5-19	Date Drilling Completed: 24-5-19	Project Number: 336967.0002.0000
Contractor:	Excavation Method: Machine Dug	Surface Elev. (m) ---	TOC Elevation (m) ---	Total Depth (m bgs) 1.0
Trial Pit Location:		Personnel Logged By - Trial Pitter -		Excavation Equipment:
Civil Town/City/or Village:	County:	Water Level Observations: While Drilling: Date/Time After Drilling: Date/Time		Depth (m bgs) Depth (m bgs)

SAMPLE		SPT N VALUE	DEPTH IN METERS	LITHOLOGIC DESCRIPTION	USCS	GRAPHIC LOG	COMMENTS
NUMBER AND TYPE	RECOVERY (%)						
LAB				HARD STANDING. Asphalt.			
				HARD STANDING. Reinforced concrete.			
				Black brown gravelly SAND. Sand is fine to coarse, gravel is fine to coarse and sub angular. Gravel is composed of brick and concrete.			
				Dark grey CLAY.			
LAB			1				

Signature:	Firm: TRC Solutions	Fax
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TRIAL PITTING LOG (METRIC) NESTLE HAYES JG FURTHER TP.GPJ 336967.0002.0000 5-6-19



TRIAL PITTING LOG

TRIAL PIT NO. TP419

Page 1 of 1

Facility/Project Name: Nestle Hayes		Date Drilling Started: 24-5-19	Date Drilling Completed: 24-5-19	Project Number: 336967.0002.0000
Contractor:	Excavation Method: Machine Dug	Surface Elev. (m) ---	TOC Elevation (m) ---	Total Depth (m bgs) 0.8
Trial Pit Location:		Personnel Logged By - Trial Pitter -		Excavation Equipment:
Civil Town/City/or Village:	County:	Water Level Observations: While Drilling: Date/Time After Drilling: Date/Time		Depth (m bgs) Depth (m bgs)

SAMPLE		SPT N VALUE	DEPTH IN METERS	LITHOLOGIC DESCRIPTION	USCS	GRAPHIC LOG	COMMENTS
NUMBER AND TYPE	RECOVERY (%)						
LAB				HARD STANDING. Asphalt.			
				MADE GROUND. Yellow brown gravelly SAND possible FILL. Sand is fine to coarse, gravel is fine to coarse. Gravel and occasional cobbles are most composed of crushed concrete.			
LAB				MADE GROUND. Black brown clayey gravelly SAND. Sand is fine to coarse, gravel is fine to coarse. Gravel and occasional cobbles are most composed of crushed concrete.			
				Dark grey slightly sandy slightly gravelly CLAY. Sand is fine to coarse, gravel is fine to medium and rounded.			Oily odour from 0.5 to 0.7m bgl.
			1				

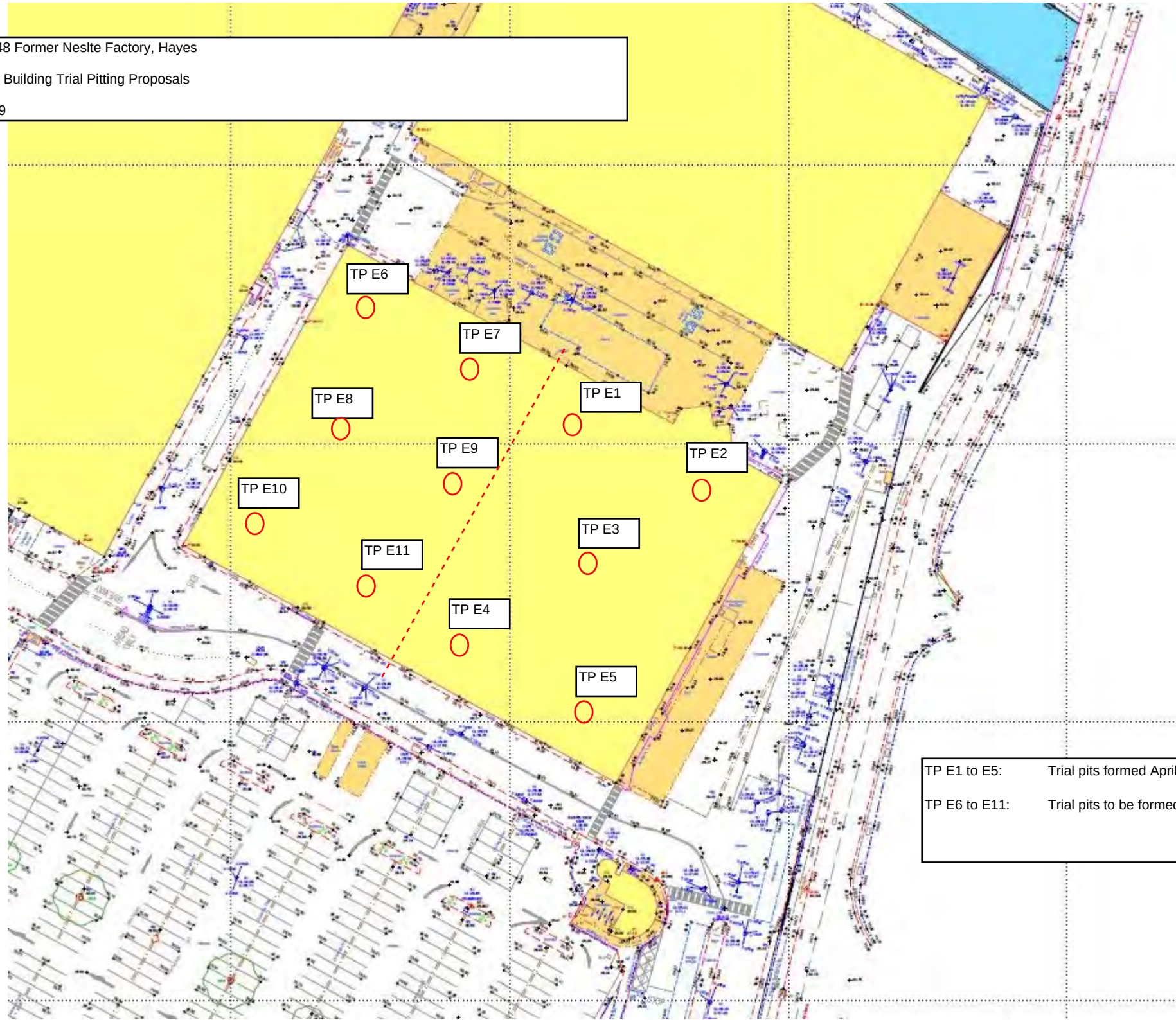
TRIAL PITTING LOG (METRIC) NESTLE HAYES JG FURTHER TP.GPJ 336967.0002.0000 5-6-19

Signature:	Firm: TRC Solutions	Fax
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18-148 Former Neslte Factory, Hayes

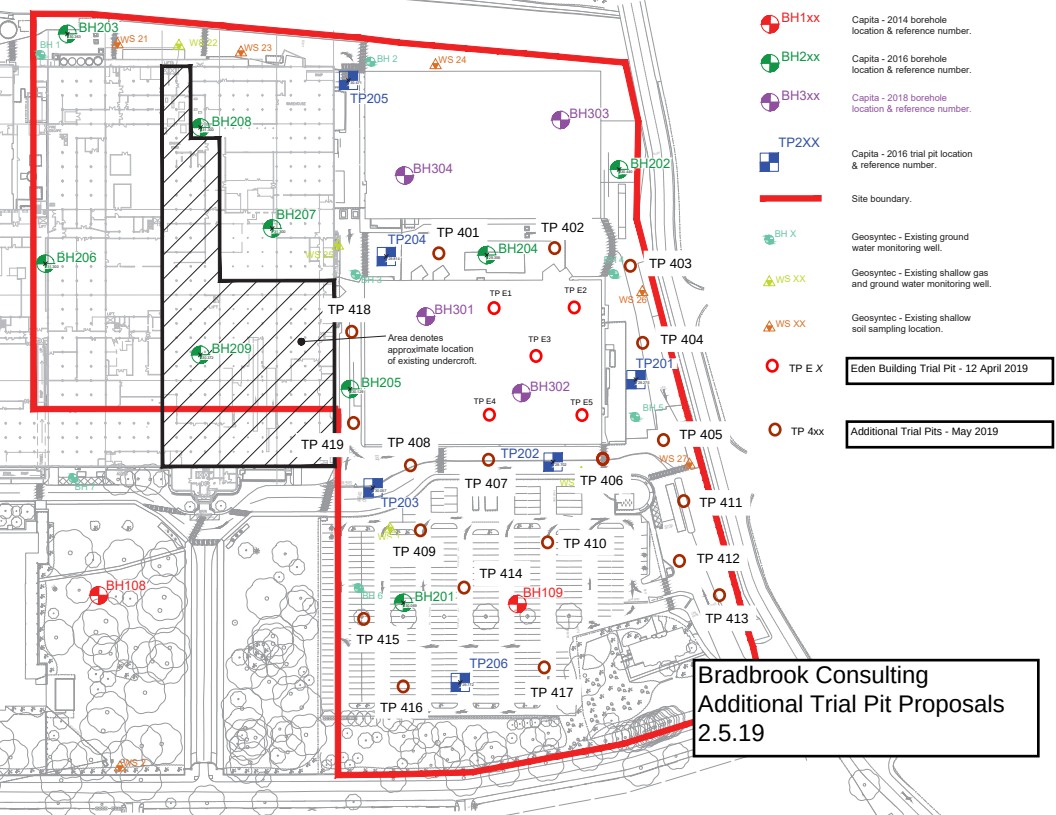
Eden Building Trial Pitting Proposals

3/6/19



TP E1 to E5: Trial pits formed April 2019

TP E6 to E11: Trial pits to be formed June 2019



APPENDIX G

LABORATORY ANALYSIS DATA – ADDITIONAL TRIAL PITS

**Abigail Li**

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i2 Analytical Ltd.
7 Woodshots Meadow,
Croxley Green
Business Park,
Watford,
Herts,
WD18 8YS

t: 01923 225404

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e: reception@i2analytical.com

Analytical Report Number : 19-37387

Project / Site name: Nestle, Hayes

Samples received on: 12/04/2019

Your job number: 336967

Samples instructed on: 15/04/2019

Your order number:

Analysis completed by: 23/04/2019

Report Issue Number: 1

Report issued on: 23/04/2019

Samples Analysed: 10 soil samples

Signed:

Dr Claire Stone
Quality Manager

For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

Excel copies of reports are only valid when accompanied by this PDF certificate.

Analytical Report Number: 19-37387

Project / Site name: Nestle, Hayes

Lab Sample Number				1200567	1200568	1200569	1200570	1200571
Sample Reference				TP E1	TP E1	TP E2	TP E2	TP E3
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.20	1.00	0.20	1.00	0.20
Date Sampled				12/04/2019	12/04/2019	12/04/2019	12/04/2019	12/04/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	-	-	-	-	-
Moisture Content	%	N/A	NONE	-	-	-	-	-
Total mass of sample received	kg	0.001	NONE	-	-	-	-	-

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	Chrysotile	Chrysotile & Amosite	Crocidolite	Amosite	-
Asbestos in Soil	Type	N/A	ISO 17025	Detected	Detected	Detected	Detected	Not-detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	< 0.001	< 0.001	< 0.001	< 0.001	-
Asbestos Quantification Total	%	0.001	ISO 17025	< 0.001	< 0.001	< 0.001	< 0.001	-

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	-	-	-	-	-
Total Cyanide	mg/kg	1	MCERTS	-	-	-	-	-
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	-	-	-	-	-
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	-	-	-	-	-
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	-	-	-	-	-
Organic Matter	%	0.1	MCERTS	-	-	-	-	-
Total Organic Carbon (TOC)	%	0.1	MCERTS	-	-	-	-	-

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	-	-	-	-	-
Acenaphthylene	mg/kg	0.05	MCERTS	-	-	-	-	-
Acenaphthene	mg/kg	0.05	MCERTS	-	-	-	-	-
Fluorene	mg/kg	0.05	MCERTS	-	-	-	-	-
Phenanthrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	-
Pyrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Chrysene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	-	-	-	-

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	-	-	-	-	-
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Analytical Report Number: 19-37387

Project / Site name: Nestle, Hayes

Lab Sample Number				1200567	1200568	1200569	1200570	1200571
Sample Reference				TP E1	TP E1	TP E2	TP E2	TP E3
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.20	1.00	0.20	1.00	0.20
Date Sampled				12/04/2019	12/04/2019	12/04/2019	12/04/2019	12/04/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Boron (water soluble)	mg/kg	0.2	MCERTS	-	-	-	-	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	-	-	-	-	-
Chromium (hexavalent)	mg/kg	4	MCERTS	-	-	-	-	-
Chromium (III)	mg/kg	1	NONE	-	-	-	-	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Copper (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Lead (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	-	-	-	-	-
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-

Monoaromatics & Oxygenates

Benzene	ug/kg	1	MCERTS	-	-	-	-	-
Toluene	ug/kg	1	MCERTS	-	-	-	-	-
Ethylbenzene	ug/kg	1	MCERTS	-	-	-	-	-
p & m-xylene	ug/kg	1	MCERTS	-	-	-	-	-
o-xylene	ug/kg	1	MCERTS	-	-	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	ug/kg	1	MCERTS	-	-	-	-	-

Petroleum Hydrocarbons

Petroleum Range Organics (C6 - C10)	mg/kg	0.1	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	-	-	-	-	-

Analytical Report Number: 19-37387

Project / Site name: Nestle, Hayes

Lab Sample Number				1200572	1200573	1200574	1200575	1200576
Sample Reference				TP E3	TP E4	TP E4	TP E5	TP E5
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.00	0.20	1.00	0.20	1.00
Date Sampled				12/04/2019	12/04/2019	12/04/2019	12/04/2019	12/04/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	-	-	-	-	< 0.1
Moisture Content	%	N/A	NONE	-	-	-	-	14
Total mass of sample received	kg	0.001	NONE	-	-	-	-	1.2

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	Chrysotile	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Detected	Not-detected	Not-detected	Not-detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	< 0.001	-	-	-
Asbestos Quantification Total	%	0.001	ISO 17025	-	< 0.001	-	-	-

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	-	-	-	-	8.0
Total Cyanide	mg/kg	1	MCERTS	-	-	-	-	< 1
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	-	-	-	-	420
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	-	-	-	-	0.21
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	-	-	-	-	209
Organic Matter	%	0.1	MCERTS	-	-	-	-	1.7
Total Organic Carbon (TOC)	%	0.1	MCERTS	-	-	-	-	1.0

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	-	-	-	-	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	-	-	-	-	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	-	-	-	-	< 0.05
Fluorene	mg/kg	0.05	MCERTS	-	-	-	-	0.26
Phenanthrene	mg/kg	0.05	MCERTS	-	-	-	-	1.4
Anthracene	mg/kg	0.05	MCERTS	-	-	-	-	0.36
Fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	2.4
Pyrene	mg/kg	0.05	MCERTS	-	-	-	-	2.0
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	-	-	-	1.3
Chrysene	mg/kg	0.05	MCERTS	-	-	-	-	1.7
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	1.7
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	0.88
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	-	-	-	1.4
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	-	-	-	0.54
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	-	-	-	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	-	-	-	0.65

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	-	-	-	-	14.5
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Analytical Report Number: 19-37387

Project / Site name: Nestle, Hayes

Lab Sample Number				1200572	1200573	1200574	1200575	1200576
Sample Reference				TP E3	TP E4	TP E4	TP E5	TP E5
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.00	0.20	1.00	0.20	1.00
Date Sampled				12/04/2019	12/04/2019	12/04/2019	12/04/2019	12/04/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	14
Boron (water soluble)	mg/kg	0.2	MCERTS	-	-	-	-	5.5
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	-	-	-	-	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	-	-	-	-	< 4.0
Chromium (III)	mg/kg	1	NONE	-	-	-	-	24
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	24
Copper (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	45
Lead (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	190
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	-	-	-	-	1.7
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	24
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	92

Monoaromatics & Oxygenates

Benzene	ug/kg	1	MCERTS	-	-	-	-	< 1.0
Toluene	ug/kg	1	MCERTS	-	-	-	-	< 1.0
Ethylbenzene	ug/kg	1	MCERTS	-	-	-	-	< 1.0
p & m-xylene	ug/kg	1	MCERTS	-	-	-	-	< 1.0
o-xylene	ug/kg	1	MCERTS	-	-	-	-	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	ug/kg	1	MCERTS	-	-	-	-	< 1.0

Petroleum Hydrocarbons

Petroleum Range Organics (C6 - C10)	mg/kg	0.1	MCERTS	-	-	-	-	< 0.1
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	-	-	-	-	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	-	-	-	-	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	-	-	-	-	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	-	-	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	-	-	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	-	-	-	-	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	-	-	-	-	< 8.0
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	-	-	-	-	< 10
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	-	-	-	-	< 0.001
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	-	-	-	-	< 0.001
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	-	-	-	-	< 0.001
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	-	-	2.7
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	-	-	8.7
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	-	-	-	-	23
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	-	-	-	-	46
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	-	-	-	-	81



Analytical Report Number: **19-37387**
Project / Site name: **Nestle, Hayes**
Your Order No:

Certificate of Analysis - Asbestos Quantification

Methods:

Qualitative Analysis

The samples were analysed qualitatively for asbestos by polarising light and dispersion staining as described by the Health and Safety Executive in HSG 248.

Quantitative Analysis

The analysis was carried out using our documented in-house method A006 based on HSE Contract Research Report No: 83/1996: Development and Validation of an analytical method to determine the amount of asbestos in soils and loose aggregates (Davies et al, 1996) and HSG 248. Our method includes initial examination of the entire representative sample, then fractionation and detailed analysis of each fraction, with quantification by hand picking and weighing.

The limit of detection (reporting limit) of this method is 0.001 %.

The method has been validated using samples of at least 100 g, results for samples smaller than this should be interpreted with caution.

Both Qualitative and Quantitative Analyses are UKAS accredited.

Sample Number	Sample ID	Sample Depth (m)	Sample Weight (g)	Asbestos Containing Material Types Detected (ACM)	PLM Results	Asbestos by hand picking/weighing (%)	Total % Asbestos in Sample
1200567	TP E1	0.20	137	Loose Fibres	Chrysotile	< 0.001	< 0.001
1200568	TP E1	1.00	132	Loose Fibres & Loose Fibrous Debris	Chrysotile & Amosite	< 0.001	< 0.001
1200569	TP E2	0.20	151	Loose Fibres	Crocidolite	< 0.001	< 0.001
1200570	TP E2	1.00	160	Loose Fibres	Amosite	< 0.001	< 0.001
1200573	TP E4	0.20	136	Loose Fibres	Chrysotile	< 0.001	< 0.001

Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.



Analytical Report Number : 19-37387

Project / Site name: Nestle, Hayes

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
1200567	TP E1	None Supplied	0.20	-
1200568	TP E1	None Supplied	1.00	-
1200569	TP E2	None Supplied	0.20	-
1200570	TP E2	None Supplied	1.00	-
1200571	TP E3	None Supplied	0.20	-
1200572	TP E3	None Supplied	1.00	-
1200573	TP E4	None Supplied	0.20	-
1200574	TP E4	None Supplied	1.00	-
1200575	TP E5	None Supplied	0.20	-
1200576	TP E5	None Supplied	1.00	Brown clay and sand with gravel.

Analytical Report Number : 19-37387

Project / Site name: Nestle, Hayes

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Asbestos Quantification - Gravimetric	Asbestos quantification by gravimetric method - in house method based on references.	HSE Report No: 83/1996, HSG 248, HSG 264 & SCA Blue Book (draft).	A006-PL	D	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
BTEX and MTBE in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS
Cr (III) in soil	In-house method by calculation from total Cr and Cr VI.	In-house method by calculation	L080-PL	W	NONE
D.O. for Gravimetric Quant if Screen/ID positive	Dependent option for Gravimetric Quant if Screen/ID positive scheduled.	In house asbestos methods A001 & A006.	A006-PL	D	NONE
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphénylcarbazine followed by colorimetry.	In-house method	L080-PL	W	MCERTS
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 2, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
Organic matter (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	BS1377 Part 3, 1990, Chemical and Electrochemical Tests""	L009-PL	D	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L099-PL	D	MCERTS
PRO (Soil)	Determination of hydrocarbons C6-C10 by headspace GC-MS.	In-house method based on USEPA8260	L088-PL	W	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests, 2:1 water:soil extraction, analysis by ICP-OES.	L038-PL	D	MCERTS
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Total organic carbon (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests""	L009-PL	D	MCERTS

Iss No 19-37387-1 Nestle, Hayes 336967

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The results included within the report are representative of the samples submitted for analysis.

Page 8 of 9



Analytical Report Number : 19-37387

Project / Site name: Nestle, Hayes

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
TPHCWG (Soil)	Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method with silica gel split/clean up.	L088/76-PL	W	MCERTS

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.

For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

**Colin Morton**

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Analytical Report Number : 19-44793

Project / Site name:	Nestle Hayes	Samples received on:	07/06/2019
Your job number:	336967	Samples instructed on:	07/06/2019
Your order number:		Analysis completed by:	14/06/2019
Report Issue Number:	1	Report issued on:	14/06/2019
Samples Analysed:	12 soil samples		

Signed:

K. Lewicka

Katarzyna Lewicka
Head of Reporting Section
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

Excel copies of reports are only valid when accompanied by this PDF certificate.

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement. Application of uncertainty of measurement would provide a range within which the true result lies. An estimate of measurement uncertainty can be provided on request.

Iss No 19-44793-1 Nestle Hayes 336967

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The results included within the report are representative of the samples submitted for analysis.

Page 1 of 6



Analytical Report Number: 19-44793

Project / Site name: Nestle Hayes

Lab Sample Number				1240509	1240510	1240511	1240512	1240513
Sample Reference				TP E6/1	TP E6/2	TP E7/1	TP E7/2	TP E8/1
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.50	1.00	0.50	1.00	0.20
Date Sampled				06/06/2019	06/06/2019	06/06/2019	06/06/2019	06/06/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		
Asbestos in Soil Screen / Identification Name				Type	N/A	ISO 17025	-	-
Asbestos in Soil				Type	N/A	ISO 17025	Not-detected	Not-detected
Asbestos Quantification (Stage 2)				%	0.001	ISO 17025	-	-
Asbestos Quantification Total				%	0.001	ISO 17025	-	-



Analytical Report Number: 19-44793

Project / Site name: Nestle Hayes

Lab Sample Number				1240514	1240515	1240516	1240517	1240518
Sample Reference				TP E8/2	TP E9/1	TP E9/2	TP E10/1	TP E10/2
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.00	0.30	1.00	0.30	1.00
Date Sampled				06/06/2019	06/06/2019	06/06/2019	06/06/2019	06/06/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		
Asbestos in Soil Screen / Identification Name				Type	N/A	ISO 17025	-	-
Asbestos in Soil				Type	N/A	ISO 17025	Not-detected	Not-detected
Asbestos Quantification (Stage 2)				%	0.001	ISO 17025	-	-
Asbestos Quantification Total				%	0.001	ISO 17025	-	-



Analytical Report Number: 19-44793

Project / Site name: Nestle Hayes

Lab Sample Number				1240519	1240520			
Sample Reference				TP E11/1	TP E11/2			
Sample Number				None Supplied	None Supplied			
Depth (m)				0.40	1.00			
Date Sampled				06/06/2019	06/06/2019			
Time Taken				None Supplied	None Supplied			
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		
Asbestos in Soil Screen / Identification Name				Type	N/A	ISO 17025	-	Amosite
Asbestos in Soil				Type	N/A	ISO 17025	Not-detected	Detected
Asbestos Quantification (Stage 2)				%	0.001	ISO 17025	-	< 0.001
Asbestos Quantification Total				%	0.001	ISO 17025	-	< 0.001



Analytical Report Number: 19-44793
Project / Site name: Nestle Hayes
Your Order No:

Certificate of Analysis - Asbestos Quantification

Methods:

Qualitative Analysis

The samples were analysed qualitatively for asbestos by polarising light and dispersion staining as described by the Health and Safety Executive in HSG 248.

Quantitative Analysis

The analysis was carried out using our documented in-house method A006 based on HSE Contract Research Report No: 83/1996: Development and Validation of an analytical method to determine the amount of asbestos in soils and loose aggregates (Davies et al, 1996) and HSG 248. Our method includes initial examination of the entire representative sample, then fractionation and detailed analysis of each fraction, with quantification by hand picking and weighing.

The limit of detection (reporting limit) of this method is 0.001 %.

The method has been validated using samples of at least 100 g, results for samples smaller than this should be interpreted with caution.

Both Qualitative and Quantitative Analyses are UKAS accredited.

Sample Number	Sample ID	Sample Depth (m)	Sample Weight (g)	Asbestos Containing Material Types Detected (ACM)	PLM Results	Asbestos by hand picking/weighing (%)	Total % Asbestos in Sample
1240520	TP E11/2	1.00	118	Loose Fibres & Sheeting/Board Debris	Chrysotile & Amosite	< 0.001	< 0.001

Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.



Analytical Report Number : 19-44793

Project / Site name: Nestle Hayes

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Asbestos Quantification - Gravimetric	Asbestos quantification by gravimetric method - in house method based on references.	HSE Report No: 83/1996, HSG 248, HSG 264 & SCA Blue Book (draft).	A006-PL	D	ISO 17025
D.O. for Gravimetric Quant if Screen/ID positive	Dependent option for Gravimetric Quant if Screen/ID positive scheduled.	In house asbestos methods A001 & A006.	A006-PL	D	NONE

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.

For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.



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Analytical Report Number : 19-43085

Project / Site name: Nestle, Hayes

Samples received on: 23/05/2019

Your job number: 336967

Samples instructed on: 28/05/2019

Your order number:

Analysis completed by: 04/06/2019

Report Issue Number: 1

Report issued on: 04/06/2019

Samples Analysed: 28 soil samples

Signed:

Dr Claire Stone
Quality Manager
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting
leachates - 2 weeks from reporting
waters - 2 weeks from reporting
asbestos - 6 months from reporting

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Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement. Application of uncertainty of measurement would provide a range within which the true result lies. An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 19-43085

Project / Site name: Nestle, Hayes

Lab Sample Number				1231528	1231529	1231530	1231531	1231532
Sample Reference				TP410	TP410	TP413	TP413	TP411
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.20	1.10	0.40	1.40	0.50
Date Sampled				20/05/2019	20/05/2019	20/05/2019	20/05/2019	20/05/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	-	-	-	-	-
Moisture Content	%	N/A	NONE	-	-	-	-	-
Total mass of sample received	kg	0.001	NONE	-	-	-	-	-

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	Amosite	Chrysotile	-	Chrysotile
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Detected	Detected	Not-detected	Detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	< 0.001	< 0.001	-	< 0.001
Asbestos Quantification Total	%	0.001	ISO 17025	-	< 0.001	< 0.001	-	< 0.001

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	-	-	-	-	-
Total Cyanide	mg/kg	1	MCERTS	-	-	-	-	-
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	-	-	-	-	-
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	-	-	-	-	-
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	-	-	-	-	-
Organic Matter	%	0.1	MCERTS	-	-	-	-	-
Total Organic Carbon (TOC)	%	0.1	MCERTS	-	-	-	-	-

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	-	-	-	-	-
Acenaphthylene	mg/kg	0.05	MCERTS	-	-	-	-	-
Acenaphthene	mg/kg	0.05	MCERTS	-	-	-	-	-
Fluorene	mg/kg	0.05	MCERTS	-	-	-	-	-
Phenanthrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	-
Pyrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Chrysene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	-	-	-	-

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	-	-	-	-	-
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Analytical Report Number: 19-43085

Project / Site name: Nestle, Hayes

Lab Sample Number				1231528	1231529	1231530	1231531	1231532
Sample Reference				TP410	TP410	TP413	TP413	TP411
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.20	1.10	0.40	1.40	0.50
Date Sampled				20/05/2019	20/05/2019	20/05/2019	20/05/2019	20/05/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Boron (water soluble)	mg/kg	0.2	MCERTS	-	-	-	-	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	-	-	-	-	-
Chromium (hexavalent)	mg/kg	4	MCERTS	-	-	-	-	-
Chromium (III)	mg/kg	1	NONE	-	-	-	-	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Copper (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Lead (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	-	-	-	-	-
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-

Monoaromatics & Oxygenates

Benzene	µg/kg	1	MCERTS	-	-	-	-	-
Toluene	µg/kg	1	MCERTS	-	-	-	-	-
Ethylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
p & m-xylene	µg/kg	1	MCERTS	-	-	-	-	-
o-xylene	µg/kg	1	MCERTS	-	-	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	-	-	-	-

Petroleum Hydrocarbons

Petroleum Range Organics (C6 - C10)	mg/kg	0.1	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	-	-	-	-	-

Analytical Report Number: 19-43085

Project / Site name: Nestle, Hayes

Lab Sample Number				1231533	1231534	1231535	1231536	1231537
Sample Reference				TP411	TP412	TP412	TP404	TP404
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.75	0.30	1.00	0.35	1.40
Date Sampled				20/05/2019	20/05/2019	20/05/2019	21/05/2019	21/05/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	-	-	-	< 0.1
Moisture Content	%	N/A	NONE	15	-	-	-	17
Total mass of sample received	kg	0.001	NONE	1.1	-	-	-	1.4

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	Chrysotile & Amosite	-	-	Amosite	-
Asbestos in Soil	Type	N/A	ISO 17025	Detected	Not-detected	Not-detected	Detected	Not-detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	0.020	-	-	< 0.001	-
Asbestos Quantification Total	%	0.001	ISO 17025	0.020	-	-	< 0.001	-

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	9.6	-	-	-	8.8
Total Cyanide	mg/kg	1	MCERTS	< 1	-	-	-	< 1
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	1400	-	-	-	1400
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.72	-	-	-	0.70
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	722	-	-	-	701
Organic Matter	%	0.1	MCERTS	3.9	-	-	-	2.6
Total Organic Carbon (TOC)	%	0.1	MCERTS	2.2	-	-	-	1.5

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	0.54	-	-	-	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	-	-	-	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	0.70	-	-	-	< 0.05
Fluorene	mg/kg	0.05	MCERTS	0.87	-	-	-	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	5.7	-	-	-	1.0
Anthracene	mg/kg	0.05	MCERTS	1.5	-	-	-	0.16
Fluoranthene	mg/kg	0.05	MCERTS	7.8	-	-	-	2.1
Pyrene	mg/kg	0.05	MCERTS	6.4	-	-	-	2.0
Benzo(a)anthracene	mg/kg	0.05	MCERTS	3.2	-	-	-	1.0
Chrysene	mg/kg	0.05	MCERTS	3.0	-	-	-	1.3
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	3.7	-	-	-	1.9
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	1.5	-	-	-	0.66
Benzo(a)pyrene	mg/kg	0.05	MCERTS	2.7	-	-	-	1.4
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	1.0	-	-	-	0.67
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	-	-	-	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	1.4	-	-	-	0.97

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	40.1	-	-	-	13.2
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Analytical Report Number: 19-43085

Project / Site name: Nestle, Hayes

Lab Sample Number				1231533	1231534	1231535	1231536	1231537
Sample Reference				TP411	TP412	TP412	TP404	TP404
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.75	0.30	1.00	0.35	1.40
Date Sampled				20/05/2019	20/05/2019	20/05/2019	21/05/2019	21/05/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	20	-	-	-	11
Boron (water soluble)	mg/kg	0.2	MCERTS	2.9	-	-	-	2.2
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.2	-	-	-	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	-	-	-	< 4.0
Chromium (III)	mg/kg	1	NONE	24	-	-	-	18
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	25	-	-	-	19
Copper (aqua regia extractable)	mg/kg	1	MCERTS	94	-	-	-	38
Lead (aqua regia extractable)	mg/kg	1	MCERTS	160	-	-	-	170
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	1.6	-	-	-	1.5
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	33	-	-	-	16
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	2.0	-	-	-	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	160	-	-	-	160

Monoaromatics & Oxygenates

Benzene	µg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0

Petroleum Hydrocarbons

Petroleum Range Organics (C6 - C10)	mg/kg	0.1	MCERTS	< 0.1	-	-	-	< 0.1
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	< 0.001	-	-	-	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	< 0.001	-	-	-	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	-	-	-	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	5.2	-	-	-	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	9.6	-	-	-	7.9
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	17	-	-	-	17
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	51	-	-	-	48
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	83	-	-	-	74
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	< 0.001	-	-	-	< 0.001
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	< 0.001	-	-	-	< 0.001
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	-	-	-	< 0.001
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	7.2	-	-	-	1.9
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	20	-	-	-	15
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	81	-	-	-	56
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	190	-	-	-	110
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	300	-	-	-	190

Analytical Report Number: 19-43085

Project / Site name: Nestle, Hayes

Lab Sample Number				1231538	1231539	1231540	1231541	1231542
Sample Reference				TP403	TP403	TP402	TP404	TP401
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.30	1.05	0.30	0.70	0.30
Date Sampled				21/05/2019	21/05/2019	21/05/2019	21/05/2019	21/05/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	-	-	-	< 0.1	-
Moisture Content	%	N/A	NONE	-	-	-	7.3	-
Total mass of sample received	kg	0.001	NONE	-	-	-	1.2	-

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	Chrysotile & Amosite	Chrysotile	Chrysotile	Chrysotile
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Detected	Detected	Detected	Detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	< 0.001	< 0.001	< 0.001	< 0.001
Asbestos Quantification Total	%	0.001	ISO 17025	-	< 0.001	< 0.001	< 0.001	< 0.001

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	-	-	-	11.6	-
Total Cyanide	mg/kg	1	MCERTS	-	-	-	< 1	-
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	-	-	-	220	-
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	-	-	-	0.11	-
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	-	-	-	111	-
Organic Matter	%	0.1	MCERTS	-	-	-	0.7	-
Total Organic Carbon (TOC)	%	0.1	MCERTS	-	-	-	0.4	-

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	-	-	-	0.42	-
Acenaphthylene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-
Acenaphthene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-
Fluorene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-
Phenanthrene	mg/kg	0.05	MCERTS	-	-	-	0.29	-
Anthracene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-
Fluoranthene	mg/kg	0.05	MCERTS	-	-	-	0.31	-
Pyrene	mg/kg	0.05	MCERTS	-	-	-	0.29	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-
Chrysene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	-	-	-	1.31	-
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Analytical Report Number: 19-43085

Project / Site name: Nestle, Hayes

Lab Sample Number				1231538	1231539	1231540	1231541	1231542
Sample Reference				TP403	TP403	TP402	TP404	TP401
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.30	1.05	0.30	0.70	0.30
Date Sampled				21/05/2019	21/05/2019	21/05/2019	21/05/2019	21/05/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	9.3	-
Boron (water soluble)	mg/kg	0.2	MCERTS	-	-	-	2.0	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	-	-	-	< 0.2	-
Chromium (hexavalent)	mg/kg	4	MCERTS	-	-	-	< 4.0	-
Chromium (III)	mg/kg	1	NONE	-	-	-	22	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	22	-
Copper (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	19	-
Lead (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	46	-
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	-	-	-	< 0.3	-
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	17	-
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	< 1.0	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	53	-

Monoaromatics & Oxygenates

Benzene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
Toluene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
Ethylbenzene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
p & m-xylene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
o-xylene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	-	-	< 1.0	-

Petroleum Hydrocarbons

Petroleum Range Organics (C6 - C10)	mg/kg	0.1	MCERTS	-	-	-	< 0.1	-
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	-	-	-	< 0.001	-
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	-	-	-	< 0.001	-
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	-	-	-	< 0.001	-
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	-	4.8	-
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	-	12	-
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	-	-	-	26	-
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	-	-	-	140	-
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	-	-	-	180	-
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	-	-	-	< 0.001	-
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	-	-	-	< 0.001	-
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	-	-	-	< 0.001	-
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	-	< 1.0	-
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	-	< 2.0	-
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	-	-	-	< 10	-
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	-	-	-	34	-
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	-	-	-	42	-

Analytical Report Number: 19-43085

Project / Site name: Nestle, Hayes

Lab Sample Number				1231543	1231544	1231545	1231546	1231547
Sample Reference				TP401	TP406	TP406	TP407	TP407
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.70	0.30	0.50	0.20	0.80
Date Sampled				21/05/2019	22/05/2019	22/05/2019	22/05/2019	22/05/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	-	-	-	-	-
Moisture Content	%	N/A	NONE	-	-	-	-	-
Total mass of sample received	kg	0.001	NONE	-	-	-	-	-

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	-	Chrysotile
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	-	-	-	< 0.001
Asbestos Quantification Total	%	0.001	ISO 17025	-	-	-	-	< 0.001

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	-	-	-	-	-
Total Cyanide	mg/kg	1	MCERTS	-	-	-	-	-
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	-	-	-	-	-
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	-	-	-	-	-
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	-	-	-	-	-
Organic Matter	%	0.1	MCERTS	-	-	-	-	-
Total Organic Carbon (TOC)	%	0.1	MCERTS	-	-	-	-	-

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	-	-	-	-	-
Acenaphthylene	mg/kg	0.05	MCERTS	-	-	-	-	-
Acenaphthene	mg/kg	0.05	MCERTS	-	-	-	-	-
Fluorene	mg/kg	0.05	MCERTS	-	-	-	-	-
Phenanthrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	-
Pyrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Chrysene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	-	-	-	-

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	-	-	-	-	-
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Analytical Report Number: 19-43085

Project / Site name: Nestle, Hayes

Lab Sample Number				1231543	1231544	1231545	1231546	1231547
Sample Reference				TP401	TP406	TP406	TP407	TP407
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.70	0.30	0.50	0.20	0.80
Date Sampled				21/05/2019	22/05/2019	22/05/2019	22/05/2019	22/05/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Boron (water soluble)	mg/kg	0.2	MCERTS	-	-	-	-	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	-	-	-	-	-
Chromium (hexavalent)	mg/kg	4	MCERTS	-	-	-	-	-
Chromium (III)	mg/kg	1	NONE	-	-	-	-	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Copper (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Lead (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	-	-	-	-	-
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-

Monoaromatics & Oxygenates

Benzene	µg/kg	1	MCERTS	-	-	-	-	-
Toluene	µg/kg	1	MCERTS	-	-	-	-	-
Ethylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
p & m-xylene	µg/kg	1	MCERTS	-	-	-	-	-
o-xylene	µg/kg	1	MCERTS	-	-	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	-	-	-	-

Petroleum Hydrocarbons

Petroleum Range Organics (C6 - C10)	mg/kg	0.1	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	-	-	-	-	-

Analytical Report Number: 19-43085

Project / Site name: Nestle, Hayes

Lab Sample Number				1231548	1231549	1231550	1231551	1231552
Sample Reference				TP408	TP408	TP419	TP419	TP418
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.30	0.90	0.20	0.65	0.40
Date Sampled				22/05/2019	22/05/2019	24/05/2019	24/05/2019	24/05/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	-	-	-	< 0.1	-
Moisture Content	%	N/A	NONE	-	-	-	13	-
Total mass of sample received	kg	0.001	NONE	-	-	-	1.2	-

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	Chrysotile	-	-	Chrysotile & Amosite
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Detected	Not-detected	Not-detected	Detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	< 0.001	-	-	< 0.001
Asbestos Quantification Total	%	0.001	ISO 17025	-	< 0.001	-	-	< 0.001

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	-	-	-	8.0	-
Total Cyanide	mg/kg	1	MCERTS	-	-	-	< 1	-
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	-	-	-	820	-
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	-	-	-	0.41	-
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	-	-	-	408	-
Organic Matter	%	0.1	MCERTS	-	-	-	2.5	-
Total Organic Carbon (TOC)	%	0.1	MCERTS	-	-	-	1.5	-

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	-	-	-	0.28	-
Acenaphthylene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-
Acenaphthene	mg/kg	0.05	MCERTS	-	-	-	0.70	-
Fluorene	mg/kg	0.05	MCERTS	-	-	-	1.0	-
Phenanthrene	mg/kg	0.05	MCERTS	-	-	-	6.9	-
Anthracene	mg/kg	0.05	MCERTS	-	-	-	1.9	-
Fluoranthene	mg/kg	0.05	MCERTS	-	-	-	10	-
Pyrene	mg/kg	0.05	MCERTS	-	-	-	9.1	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	-	-	4.6	-
Chrysene	mg/kg	0.05	MCERTS	-	-	-	3.9	-
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	-	-	-	6.0	-
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	-	-	-	1.8	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	-	-	4.7	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	-	-	1.9	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	-	-	2.6	-

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	-	-	-	55.6	-
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Analytical Report Number: 19-43085

Project / Site name: Nestle, Hayes

Lab Sample Number				1231548	1231549	1231550	1231551	1231552
Sample Reference				TP408	TP408	TP419	TP419	TP418
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.30	0.90	0.20	0.65	0.40
Date Sampled				22/05/2019	22/05/2019	24/05/2019	24/05/2019	24/05/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	14	-
Boron (water soluble)	mg/kg	0.2	MCERTS	-	-	-	3.3	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	-	-	-	< 0.2	-
Chromium (hexavalent)	mg/kg	4	MCERTS	-	-	-	< 4.0	-
Chromium (III)	mg/kg	1	NONE	-	-	-	19	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	19	-
Copper (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	75	-
Lead (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	230	-
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	-	-	-	2.4	-
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	16	-
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	< 1.0	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	110	-

Monoaromatics & Oxygenates

Benzene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
Toluene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
Ethylbenzene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
p & m-xylene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
o-xylene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	-	-	< 1.0	-

Petroleum Hydrocarbons

Petroleum Range Organics (C6 - C10)	mg/kg	0.1	MCERTS	-	-	-	< 0.1	-
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	-	-	-	< 0.001	-
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	-	-	-	< 0.001	-
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	-	-	-	< 0.001	-
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	-	< 1.0	-
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	-	< 2.0	-
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	-	-	-	< 8.0	-
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	-	-	-	16	-
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	-	-	-	16	-
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	-	-	-	< 0.001	-
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	-	-	-	< 0.001	-
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	-	-	-	< 0.001	-
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	-	2.0	-
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	-	9.8	-
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	-	-	-	57	-
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	-	-	-	120	-
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	-	-	-	190	-

Analytical Report Number: 19-43085

Project / Site name: Nestle, Hayes

Lab Sample Number				1231553	1231554	1231555		
Sample Reference				TP418	TP408	TP408		
Sample Number				None Supplied	None Supplied	None Supplied		
Depth (m)				0.65	0.50	1.00		
Date Sampled				24/05/2019	24/05/2019	24/05/2019		
Time Taken				None Supplied	None Supplied	None Supplied		
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	-	-	-		
Moisture Content	%	N/A	NONE	-	-	-		
Total mass of sample received	kg	0.001	NONE	-	-	-		

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	Chrysotile		
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Detected		
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	-	< 0.001		
Asbestos Quantification Total	%	0.001	ISO 17025	-	-	< 0.001		

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	-	-	-		
Total Cyanide	mg/kg	1	MCERTS	-	-	-		
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	-	-	-		
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	-	-	-		
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	-	-	-		
Organic Matter	%	0.1	MCERTS	-	-	-		
Total Organic Carbon (TOC)	%	0.1	MCERTS	-	-	-		

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	-	-	-		
Acenaphthylene	mg/kg	0.05	MCERTS	-	-	-		
Acenaphthene	mg/kg	0.05	MCERTS	-	-	-		
Fluorene	mg/kg	0.05	MCERTS	-	-	-		
Phenanthrene	mg/kg	0.05	MCERTS	-	-	-		
Anthracene	mg/kg	0.05	MCERTS	-	-	-		
Fluoranthene	mg/kg	0.05	MCERTS	-	-	-		
Pyrene	mg/kg	0.05	MCERTS	-	-	-		
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	-	-		
Chrysene	mg/kg	0.05	MCERTS	-	-	-		
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	-	-	-		
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	-	-	-		
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	-	-		
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	-	-		
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	-	-		
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	-	-		

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	-	-	-		
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Analytical Report Number: 19-43085

Project / Site name: Nestle, Hayes

Lab Sample Number				1231553	1231554	1231555		
Sample Reference				TP418	TP408	TP408		
Sample Number				None Supplied	None Supplied	None Supplied		
Depth (m)				0.65	0.50	1.00		
Date Sampled				24/05/2019	24/05/2019	24/05/2019		
Time Taken				None Supplied	None Supplied	None Supplied		
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-		
Boron (water soluble)	mg/kg	0.2	MCERTS	-	-	-		
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	-	-	-		
Chromium (hexavalent)	mg/kg	4	MCERTS	-	-	-		
Chromium (III)	mg/kg	1	NONE	-	-	-		
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-		
Copper (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-		
Lead (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-		
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	-	-	-		
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-		
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-		
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-		

Monoaromatics & Oxygenates

Benzene	µg/kg	1	MCERTS	-	-	-		
Toluene	µg/kg	1	MCERTS	-	-	-		
Ethylbenzene	µg/kg	1	MCERTS	-	-	-		
p & m-xylene	µg/kg	1	MCERTS	-	-	-		
o-xylene	µg/kg	1	MCERTS	-	-	-		
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	-	-		

Petroleum Hydrocarbons

Petroleum Range Organics (C6 - C10)	mg/kg	0.1	MCERTS	-	-	-		
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	-	-	-		
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	-	-	-		
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	-	-	-		
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	-		
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	-		
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	-	-	-		
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	-	-	-		
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	-	-	-		
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	-	-	-		
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	-	-	-		
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	-	-	-		
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	-		
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	-		
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	-	-	-		
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	-	-	-		
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	-	-	-		



Analytical Report Number: **19-43085**
Project / Site name: **Nestle, Hayes**
Your Order No:

Certificate of Analysis - Asbestos Quantification

Methods:

Qualitative Analysis

The samples were analysed qualitatively for asbestos by polarising light and dispersion staining as described by the Health and Safety Executive in HSG 248.

Quantitative Analysis

The analysis was carried out using our documented in-house method A006 based on HSE Contract Research Report No: 83/1996: Development and Validation of an analytical method to determine the amount of asbestos in soils and loose aggregates (Davies et al, 1996) and HSG 248. Our method includes initial examination of the entire representative sample, then fractionation and detailed analysis of each fraction, with quantification by hand picking and weighing.

The limit of detection (reporting limit) of this method is 0.001 %.

The method has been validated using samples of at least 100 g, results for samples smaller than this should be interpreted with caution.

Both Qualitative and Quantitative Analyses are UKAS accredited.

Sample Number	Sample ID	Sample Depth (m)	Sample Weight (g)	Asbestos Containing Material Types Detected (ACM)	PLM Results	Asbestos by hand picking/weighing (%)	Total % Asbestos in Sample
1231529	TP410	1.10	130	Loose Fibres	Amosite	< 0.001	< 0.001
1231530	TP413	0.40	136	Loose Fibres	Chrysotile	< 0.001	< 0.001
1231532	TP411	0.50	180	Loose Fibres	Chrysotile	< 0.001	< 0.001
1231533	TP411	0.75	133	Loose Fibrous Debris	Chrysotile & Amosite	0.020	0.020
1231536	TP404	0.35	152	Loose Fibres	Amosite	< 0.001	< 0.001
1231539	TP403	1.05	138	Loose Fibrous Debris & Loose Fibres	Chrysotile & Amosite	< 0.001	< 0.001
1231540	TP402	0.30	152	Loose Fibres	Chrysotile	< 0.001	< 0.001
1231541	TP404	0.70	142	Hard/Cement Type Material	Chrysotile	< 0.001	< 0.001
1231542	TP401	0.30	153	Loose Fibres	Chrysotile	< 0.001	< 0.001
1231547	TP407	0.80	145	Loose Fibres	Chrysotile	< 0.001	< 0.001
1231549	TP408	0.90	132	Loose Fibres	Chrysotile	< 0.001	< 0.001
1231552	TP418	0.40	147	Loose Fibres	Chrysotile & Amosite	< 0.001	< 0.001
1231555	TP408	1.00	133	Loose Fibres	Chrysotile	< 0.001	< 0.001



Analytical Report Number: 19-43085
Project / Site name: Nestle, Hayes
Your Order No:

Certificate of Analysis - Asbestos Quantification

Methods:

Qualitative Analysis

The samples were analysed qualitatively for asbestos by polarising light and dispersion staining as described by the Health and Safety Executive in HSG 248.

Quantitative Analysis

The analysis was carried out using our documented in-house method A006 based on HSE Contract Research Report No: 83/1996: Development and Validation of an analytical method to determine the amount of asbestos in soils and loose aggregates (Davies et al, 1996) and HSG 248. Our method includes initial examination of the entire representative sample, then fractionation and detailed analysis of each fraction, with quantification by hand picking and weighing.

The limit of detection (reporting limit) of this method is 0.001 %.

The method has been validated using samples of at least 100 g, results for samples smaller than this should be interpreted with caution.

Both Qualitative and Quantitative Analyses are UKAS accredited.

Sample Number	Sample ID	Sample Depth (m)	Sample Weight (g)	Asbestos Containing Material Types Detected (ACM)	PLM Results	Asbestos by hand picking/weighing (%)	Total % Asbestos in Sample
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Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.

Analytical Report Number : 19-43085

Project / Site name: Nestle, Hayes

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
1231528	TP410	None Supplied	0.20	-
1231529	TP410	None Supplied	1.10	-
1231530	TP413	None Supplied	0.40	-
1231531	TP413	None Supplied	1.40	-
1231532	TP411	None Supplied	0.50	-
1231533	TP411	None Supplied	0.75	Grey sand with gravel and brick.
1231534	TP412	None Supplied	0.30	-
1231535	TP412	None Supplied	1.00	-
1231536	TP404	None Supplied	0.35	-
1231537	TP404	None Supplied	1.40	Grey clay and sand with gravel.
1231538	TP403	None Supplied	0.30	-
1231539	TP403	None Supplied	1.05	-
1231540	TP402	None Supplied	0.30	-
1231541	TP404	None Supplied	0.70	Grey sand with gravel.
1231542	TP401	None Supplied	0.30	-
1231543	TP401	None Supplied	0.70	-
1231544	TP406	None Supplied	0.30	-
1231545	TP406	None Supplied	0.50	-
1231546	TP407	None Supplied	0.20	-
1231547	TP407	None Supplied	0.80	-
1231548	TP408	None Supplied	0.30	-
1231549	TP408	None Supplied	0.90	-
1231550	TP419	None Supplied	0.20	-
1231551	TP419	None Supplied	0.65	Grey sand with gravel.
1231552	TP418	None Supplied	0.40	-
1231553	TP418	None Supplied	0.65	-
1231554	TP408	None Supplied	0.50	-
1231555	TP408	None Supplied	1.00	-

Analytical Report Number : 19-43085

Project / Site name: Nestle, Hayes

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Asbestos Quantification - Gravimetric	Asbestos quantification by gravimetric method - in house method based on references.	HSE Report No: 83/1996, HSG 248, HSG 264 & SCA Blue Book (draft).	A006-PL	D	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
BTEX and MTBE in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L0738-PL	W	MCERTS
Cr (III) in soil	In-house method by calculation from total Cr and Cr VI.	In-house method by calculation	L080-PL	W	NONE
D.O. for Gravimetric Quant if Screen/ID positive	Dependent option for Gravimetric Quant if Screen/ID positive scheduled.	In house asbestos methods A001 & A006.	A006-PL	D	NONE
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazine followed by colorimetry.	In-house method	L080-PL	W	MCERTS
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 2, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
Organic matter (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	BS1377 Part 3, 1990, Chemical and Electrochemical Tests""	L009-PL	D	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L099-PL	D	MCERTS
PRO (Soil)	Determination of hydrocarbons C6-C10 by headspace GC-MS.	In-house method based on USEPA8260	L088-PL	W	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests, 2:1 water:soil extraction, analysis by ICP-OES.	L038-PL	D	MCERTS
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Total organic carbon (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests""	L009-PL	D	MCERTS

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The results included within the report are representative of the samples submitted for analysis.

Page 17 of 19



Analytical Report Number : 19-43085

Project / Site name: Nestle, Hayes

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
TPHCWG (Soil)	Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method with silica gel split/clean up.	L088/76-PL	W	MCERTS

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.

For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Sample ID	Other ID	Sample Type	Job	Sample Number	Sample Deviation Code	test_name	test_ref	Test Deviation code
TP404		S	19-43085	1231537	c	Total cyanide in soil	L080-PL	c
TP404		S	19-43085	1231541	c	Total cyanide in soil	L080-PL	c
TP411		S	19-43085	1231533	c	Total cyanide in soil	L080-PL	c

**Troy Randall**

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Analytical Report Number : 19-41234

Project / Site name:	Nestle, Hayes	Samples received on:	14/05/2019
Your job number:	336967	Samples instructed on:	14/05/2019
Your order number:	336967	Analysis completed by:	21/05/2019
Report Issue Number:	1	Report issued on:	21/05/2019
Samples Analysed:	11 soil samples		

Signed:

Katarzyna Lewicka
Head of Reporting Section
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

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Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement. Application of uncertainty of measurement would provide a range within which the true result lies. An estimate of measurement uncertainty can be provided on request.

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The results included within the report are representative of the samples submitted for analysis.

Page 1 of 6



Analytical Report Number: 19-41234

Project / Site name: Nestle, Hayes

Your Order No: 336967

Lab Sample Number				1221918	1221919	1221920	1221921	1221922
Sample Reference				TP409	TP409	TP414	TP414	TP415
Sample Number				ES1	ES2	ES1	ES2	ES1
Depth (m)				0.30-0.40	0.90-1.00	0.30-0.40	1.20-1.30	0.30-0.40
Date Sampled				13/05/2019	13/05/2019	13/05/2019	13/05/2019	13/05/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	Chrysotile	Chrysotile	Chrysotile	Chrysotile	Chrysotile & Amosite
Asbestos in Soil	Type	N/A	ISO 17025	Detected	Detected	Detected	Detected	Detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	0.541	< 0.001	< 0.001	< 0.001	0.011
Asbestos Quantification Total	%	0.001	ISO 17025	0.541	< 0.001	< 0.001	< 0.001	0.011



Analytical Report Number: 19-41234

Project / Site name: Nestle, Hayes

Your Order No: 336967

Lab Sample Number				1221923	1221924	1221925	1221926	1221927
Sample Reference				TP415	TP416	TP416	TP417	TP417
Sample Number				ES2	ES1	ES2	ES1	ES2
Depth (m)				1.000-1.10	0.20-0.30	1.00-1.10	0.10-0.20	0.50-0.60
Date Sampled				13/05/2019	13/05/2019	13/05/2019	13/05/2019	13/05/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	Chrysotile	-	Chrysotile	-	-
Asbestos in Soil	Type	N/A	ISO 17025	Detected	Not-detected	Detected	Not-detected	Not-detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	0.015	-	0.085	-	-
Asbestos Quantification Total	%	0.001	ISO 17025	0.015	-	0.085	-	-



Analytical Report Number: 19-41234

Project / Site name: Nestle, Hayes

Your Order No: 336967

Lab Sample Number				1223374				
Sample Reference				TP415				
Sample Number				ES3				
Depth (m)				0.30-0.40				
Date Sampled				13/05/2019				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		
Asbestos in Soil Screen / Identification Name				Type	N/A	ISO 17025	-	
Asbestos in Soil				Type	N/A	ISO 17025	Not-detected	
Asbestos Quantification (Stage 2)				%	0.001	ISO 17025	-	
Asbestos Quantification Total				%	0.001	ISO 17025	-	



Analytical Report Number: **19-41234**
Project / Site name: **Nestle, Hayes**
Your Order No: **336967**

Certificate of Analysis - Asbestos Quantification

Methods:

Qualitative Analysis

The samples were analysed qualitatively for asbestos by polarising light and dispersion staining as described by the Health and Safety Executive in HSG 248.

Quantitative Analysis

The analysis was carried out using our documented in-house method A006 based on HSE Contract Research Report No: 83/1996: Development and Validation of an analytical method to determine the amount of asbestos in soils and loose aggregates (Davies et al, 1996) and HSG 248. Our method includes initial examination of the entire representative sample, then fractionation and detailed analysis of each fraction, with quantification by hand picking and weighing.

The limit of detection (reporting limit) of this method is 0.001 %.

The method has been validated using samples of at least 100 g, results for samples smaller than this should be interpreted with caution.

Both Qualitative and Quantitative Analyses are UKAS accredited.

Sample Number	Sample ID	Sample Depth (m)	Sample Weight (g)	Asbestos Containing Material Types Detected (ACM)	PLM Results	Asbestos by hand picking/weighing (%)	Total % Asbestos in Sample
1221918	TP409	0.30-0.40	154	Hard/Cement Type Material	Chrysotile	0.541	0.541
1221919	TP409	0.90-1.00	131	Loose Fibres	Chrysotile	< 0.001	< 0.001
1221920	TP414	0.30-0.40	143	Loose Fibres	Chrysotile	< 0.001	< 0.001
1221921	TP414	1.20-1.30	142	Loose Fibres	Chrysotile	< 0.001	< 0.001
1221922	TP415	0.30-0.40	217	Loose Fibres & Loose Fibrous Debris	Chrysotile & Amosite	0.011	0.011
1221923	TP415	1.000-1.10	140	Loose Fibres & Loose Fibrous Debris & Hard/Cement Type Material	Chrysotile	0.015	0.015
1221925	TP416	1.00-1.10	140	Loose Fibres & Bitumen	Chrysotile	0.085	0.085

Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.



Analytical Report Number : 19-41234

Project / Site name: Nestle, Hayes

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos Identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Asbestos Quantification - Gravimetric	Asbestos quantification by gravimetric method - in house method based on references.	HSE Report No: 83/1996, HSG 248, HSG 264 & SCA Blue Book (draft).	A006-PL	D	ISO 17025
D.O. for Gravimetric Quant if Screen/ID positive	Dependent option for Gravimetric Quant if Screen/ID positive scheduled.	In house asbestos methods A001 & A006.	A006-PL	D	NONE

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.

For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

APPENDIX H

DECOMMISSIONED GROUNDWATER ABSTRACTION WELL RECORDS



G STOW PLC

BOREHOLE DRILLING AND WATER ENGINEERING

National: 01491 834444
International: +44 1491 834444
Fax: 01491 827640
Email: admin@gstowplc.com
Website: www.gstowplc.com

REGISTERED NUMBER 2645390

Lupton Road
Hithercroft Industrial Estate
Wallingford
Oxon OX10 9BS
United Kingdom

Squibb Group
Squibb House
Stanhope Industrial Park
Wharf Road
Stanford-Le-Hope
Essex
SS17 0EH

19th November 2019

CERTIFICATE OF COMPLETION

FORMER NESTLE FACTORY ABSTRACTION WELL DECOMMISSIONING

G Stow formally issues this certificate for the completion of decommissioning works with Squibb Group on borehole TQ17/113C, Nestle Avenue Hayes UB3 4RF. As instructed by Squibb Group (Sub-Contract Order No SG5677-03). Following approval of Method statements and Risk assessments the existing pump and rising main was removed and disposed of offsite. The borehole was then checked for total depth using a weighted dipper and found to be approximately 150m. The borehole was backfilled in accordance with Environment Agency guidelines as follows. 150m to 120m of washed and chlorinated shingle, 500mm sand blinding layer, Bentonite/cement grout from 119.5m to 79m, washed and chlorinated shingle from 79m to 50m followed by a further 500mm sand blinding layer, Bentonite/cement grout from 50m-48m, washed and chlorinated shingle from 48m to 5m below ground, C35 ready mixed concrete from 5m to top of borehole casing .

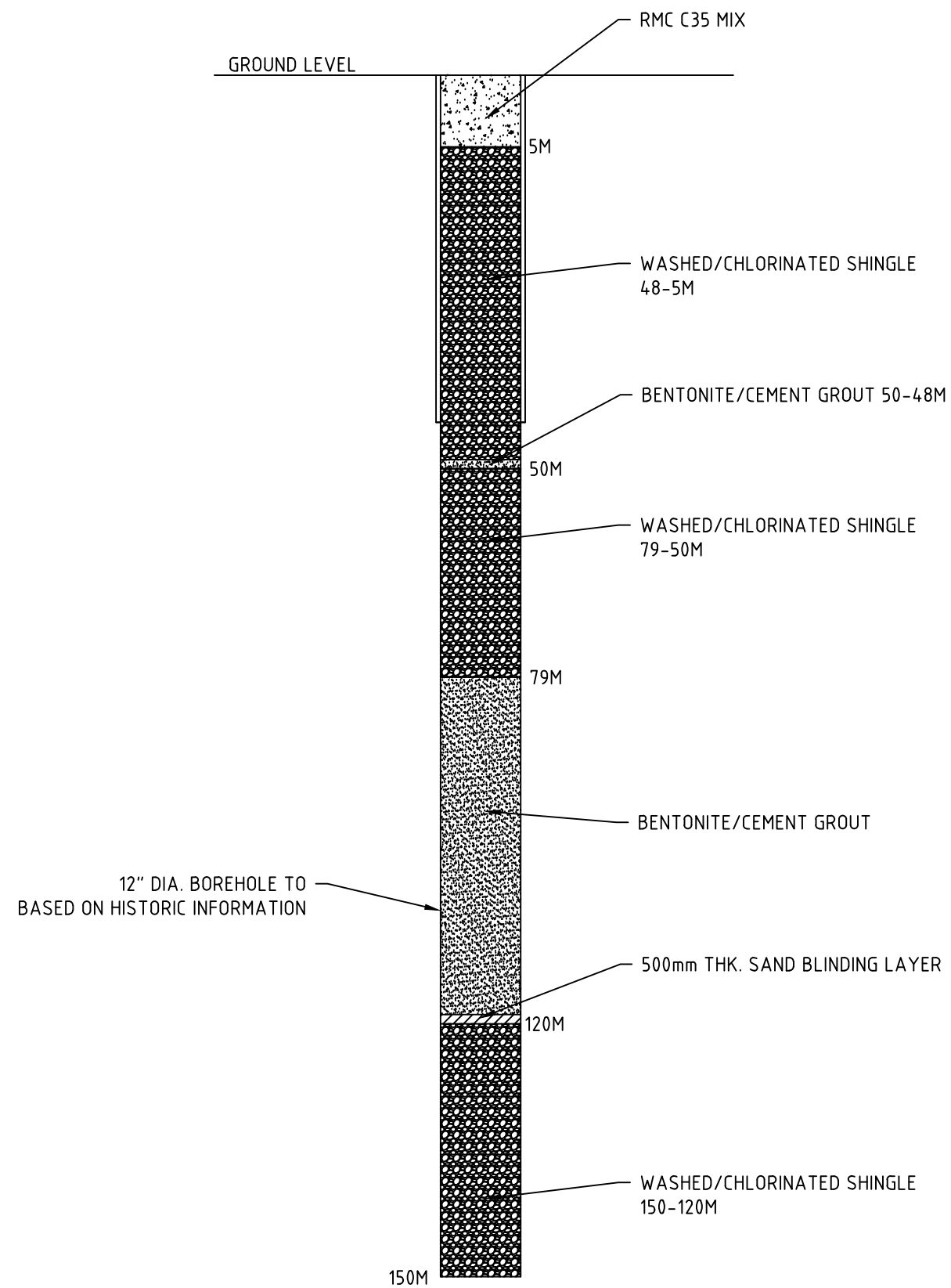
Works completed August 2019
As Constructed drawing 7779/19

Paul Greenfield

Project Manager



BOREHOLE SECTION



NOTES

ISS.	DESCRIPTION	DRN.	DATE
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WATERWORKS ENGINEERS LUPTON ROAD HITHERCROFT IND. EST. WALLINGFORD OXON, OX10 9BS	TEL: 01491 834444 FAX: 01491 827640 EMAIL: admin@gstowplc.com WEBSITE: www.gstowplc.com REGISTERED NO. 2645390
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TITLE	PROPOSED BACKFILLING
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CLIENT	NESTLE
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CONTRACT TITLE & NO.	HAYES
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DRAWN BY	MAF	SCALE	NTS
DATE	18.10.19	CONTRACT NO.	

CHECKED BY	DRAWING NO.	ISSUE
DATE	7779/19	1

